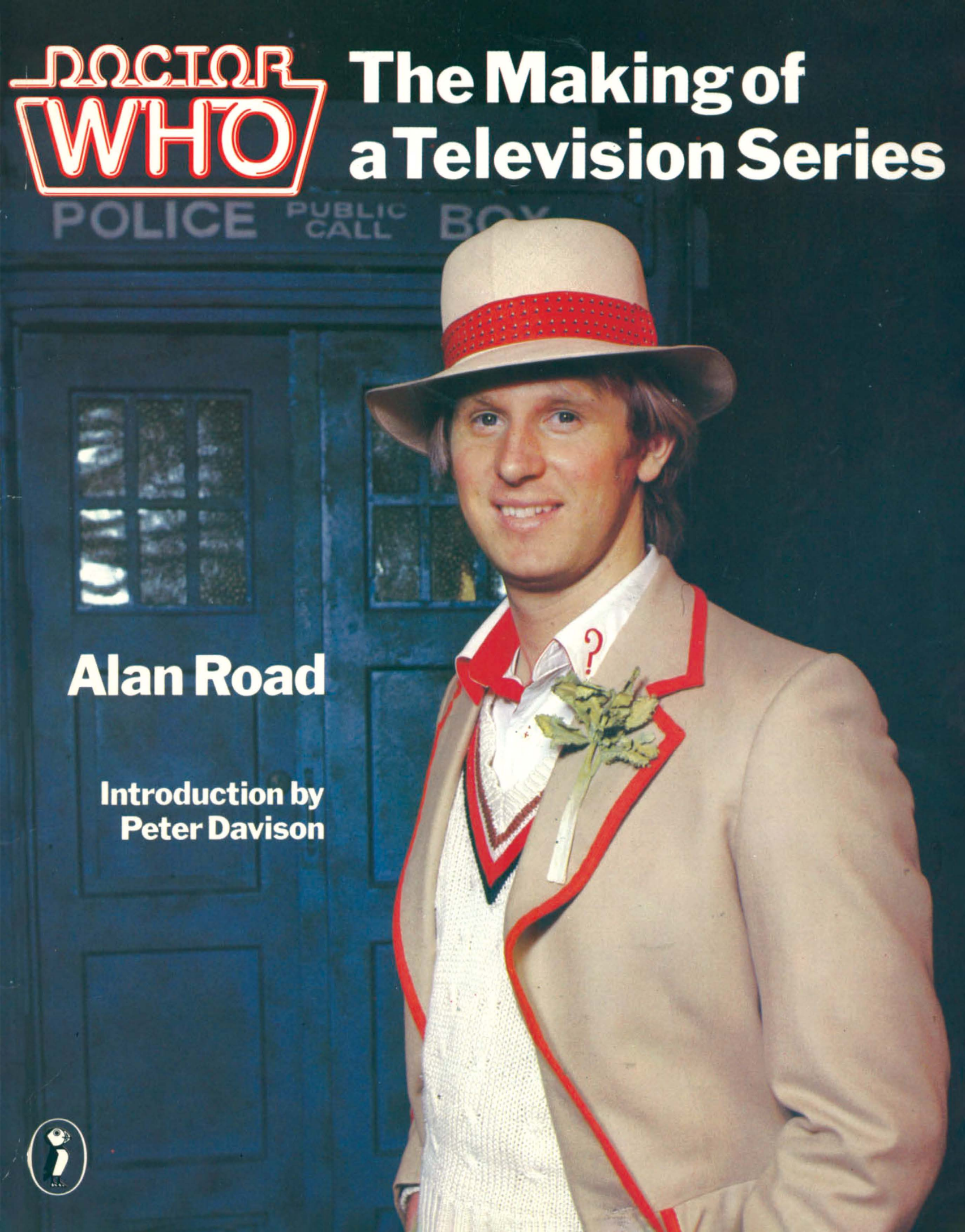
DOCTOR WHO

The Making of a Television Series



Alan Road

Introduction by Peter Davison

PUFFIN BOOKS

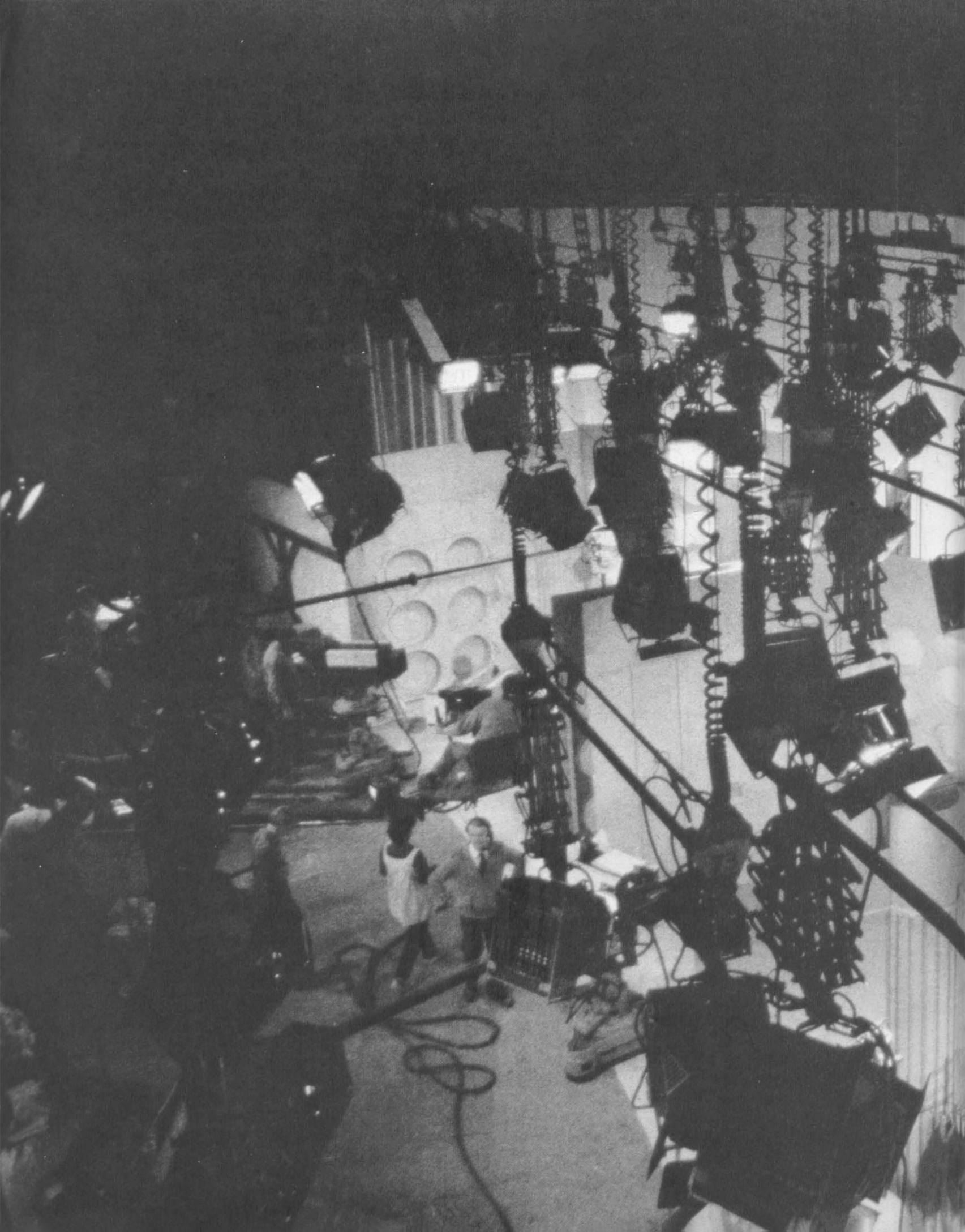
DOCTOR WHO

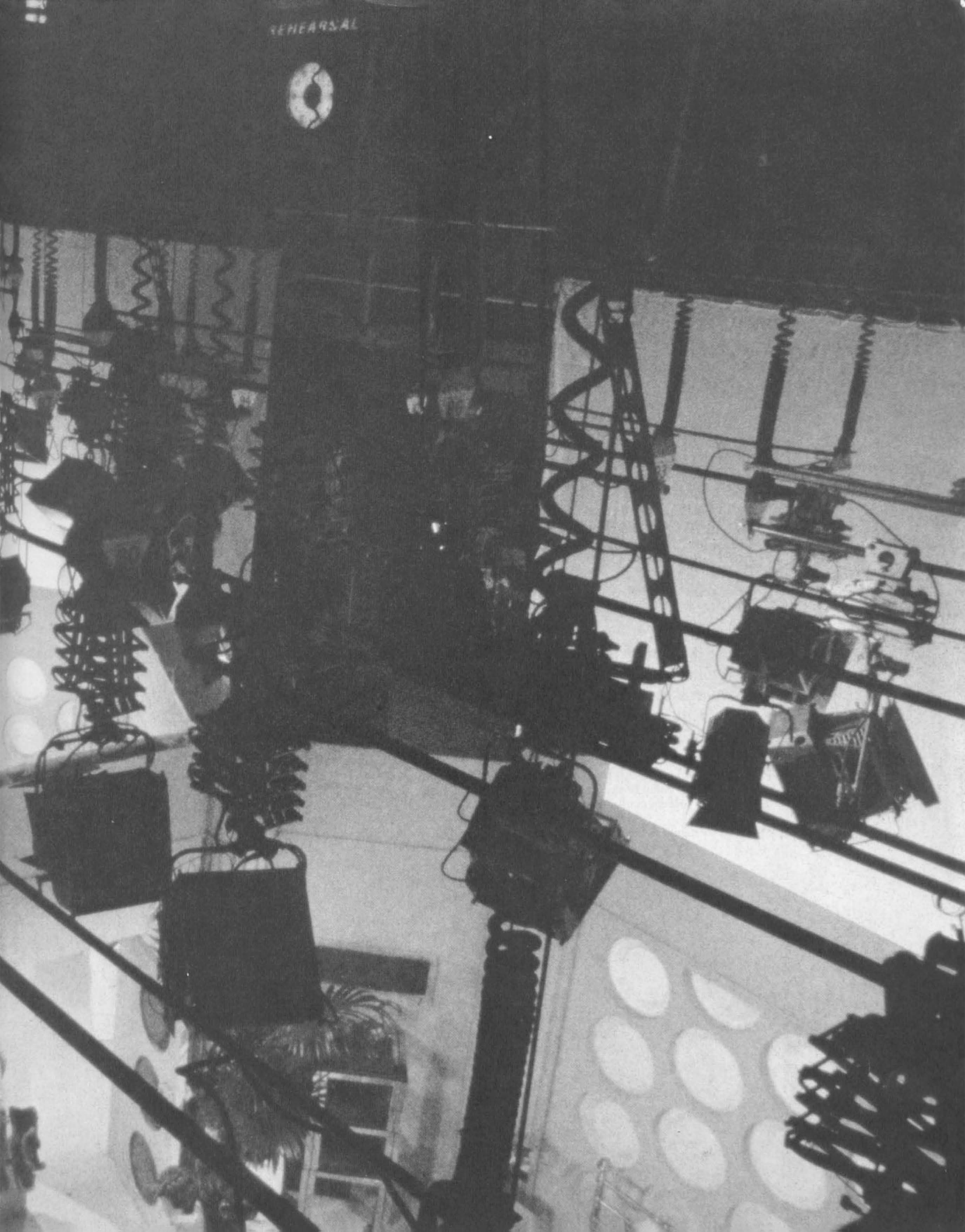
The Making of a Television Series

In the history of television *Doctor Who* occupies a very special place. It began in 1963 as a short science-fiction series intended solely for children. Twenty years and over 550 episodes later, the series is stronger than ever, with almost 100 million regular viewers throughout the world.

Doctor Who: The Making of a Television Series is a celebration of a series that has struck a deep imaginative chord with children and adults alike all round the world. It surveys the history of the series, explaining in words and pictures the changes and shifts of emphasis that have taken place over the years.

But more than that, the book offers a fascinating account of how a television programme is made. Concentrating on one particular story in the series – 'The Visitation' – it explains the truly co-operative effort that is required to put the intrepid Doctor in orbit each week.

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Introduction

It may not escape your attention as you wander through this splendid book, that the television series these facts are about is one with which I am closely connected.

I have been working in television for some years now, in various studios in various programmes and I have always found myself interested in more than my own participation in these shows. This is not selfless concern, you understand, just plain nosiness. I will sit for hours in the gallery, grab the only free chair in the editing room and I even go to the sypher dub, when I can find out where it is. What I mean is this, an actor's involvement in any programme is sandwiched between pre-production and post-production, and as in any sandwich it is always the thinnest layer. Practically everyone involved knows more about what is going on than the actor.

This book, by taking each job in turn, shows how much work and effort is needed to produce just four 25 minute programmes, as well as giving an excellent backdrop description of the world of television. What makes Doctor Who special, of course, are the alien make-up, the special effects and the electronic wizardry that help to create the illusion. The concentration and dedication of the whole team to the job in hand is enormous. It is also fun. So if having read the book, considered the facts and seen my contribution shrink into perspective, you are tempted to scream out, who wrote this introduction? Well you would of course be right. Doctor Who!

The Making of a Television Series

Introduction by Peter Davison

By Alan Road
Photographed by Richard Farley

Puffin Books

William Hartnell
Jon Pertwee
Patrick Troughton
Tom Baker
Peter Davison

Who's Who

Foreword

Back in 1963—six years before a man set foot on the moon—Dick Mills at the BBC's Radiophonics Workshop, was given a sheet of music written by popular composer Ron Grainer and asked to help turn it into a signature tune for a proposed new TV series for children.

He was told the outline of the plot, which concerned the adventures of an eccentric Doctor, who travelled through time and space in a police-box which was somehow larger on the inside than the outside.

A science-fiction fan himself, Dick Mills thought the series might run for six weeks. Eighteen years and four Doctors later, he is still working on it and *Doctor Who* has become the longest-running programme of its kind in the world. It has continued so long, in fact, that there are no longer any police-boxes like the Doctor's in use anywhere in England.

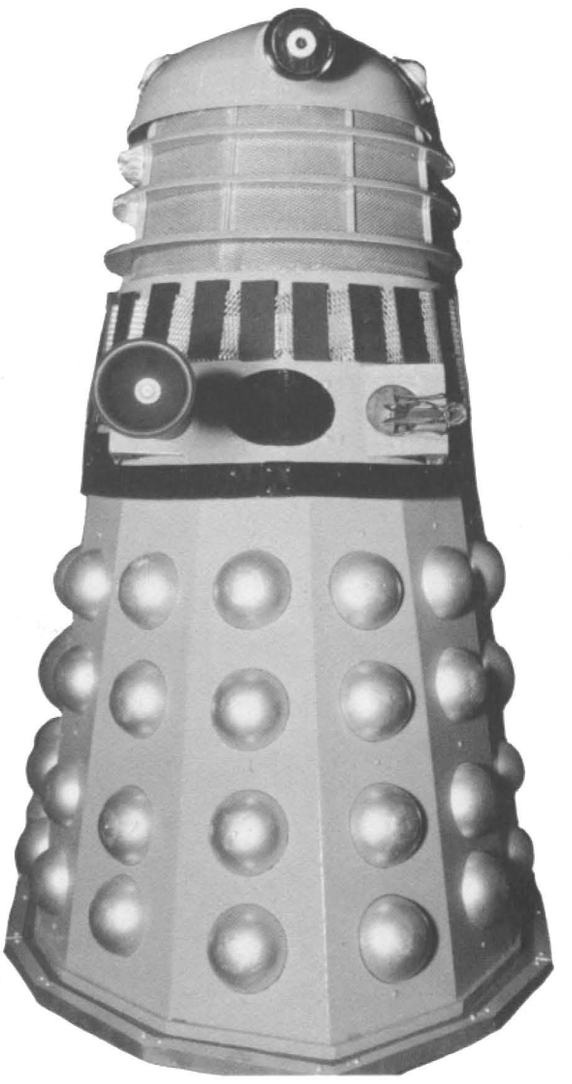
The programme is watched in Britain by almost 10 million viewers and there are another 88 million who follow it in 39 countries around the world. There have been over 120 stories with nearly 570 episodes and the Doctor has had 23 companions—17 girls and 6 boys.

★ ★ ★ ★ ★ ★

Although the series was originally intended for those between the ages of 11 and 14, a surprising 60% of its current viewers are adults. Indeed, *Doctor Who* has become a cult, with fan clubs springing up on college campuses and devotees discussing its merits at learned conventions held on both sides of the Atlantic. It is one of the BBC's biggest money-spinners.

Despite fierce fictional competition from multi-million pound films such as *Star Wars* and *Close Encounters of the Third Kind*, and the even costlier real-life exploits of America's men on the moon, the popularity of this small screen space traveller persists.

The technical wizardry that goes into the making of *Doctor Who* at the BBC's Television Centre in London rivals anything the Doctor gets up to in space. To convey the true extent of the co-operative effort that puts him in orbit each week, we have concentrated on the production of one story, "The Visitation" by Eric Saward, screened for British viewers in the early spring of 1982, with Peter Davison as the fifth incarnation of the Doctor. "The Visitation" was the fourth story in the 18-year life of this most remarkable Whodunnit to be shown twice weekly. Much of what appears in these pages would be true for the making of any television drama.



A Dalek – like a malevolent pepper pot

Doctor Who

The initial formula of *Doctor Who* is as old as the Odyssey: a central hero for the viewer to identify with and a journey to provide the hero with an infinite variety of adventures. Doctor Who is a Time Lord whose home is the planet Gallifrey in the constellation of Kasterborus.

It is said that the Doctor has two hearts, which probably accounts for his being over 700 years old; moreover his body temperature is 60 degrees Fahrenheit, which could account for his irritability and lack of human emotions.

Time Lords are aloof super-creatures who take a disinterested view of the workings of the universe. Bored with his fellow Time Lords and their immensely advanced planet, the Doctor borrows a spaceship, which is in dry dock, and sets off on a journey through time and space.

Unfortunately for the Doctor, the spacecraft, or Tardis, as it is known, is on the blink, which is probably the reason it was in dry dock in the first place. This means that she (Tardises are always female) is temperamental and prone to erratic behaviour.

Once, for instance, the Tardis was heading for an intergalactic pleasure resort, but ended up in Antarctica. The Doctor is likely to blame a temperamental solenoid on the lateral balance cones, or some such mystifying jargon, for these mishaps, but they have the advantage of offering the programme's script writers an infinite variety of destinations and adventures.

From the outside the Tardis looks like a Metropolitan Police telephone box—a form it became jammed in on a previous visit to Earth. Although the exterior exists in our physical world, the interior occupies a different dimension. This explains the paradox that enables the Tardis to be bigger on the inside than outside and gives it its name: *T*ime *A*nd *R*elative *D*imensions *I*n *S*pace.

Heart of the Tardis is the control room, with its six-panelled console, from which the Doctor directs the craft. In the centre of the console is an oscillating glass column known as the time rotor. When the time rotor is rising and falling the Tardis is in flight. If the rotor is still, the craft has materialised. Similarly, the warning light on top of the police box flashes in flight and is extinguished when it comes to rest.

In his Tardis Doctor Who has ridden like a knight errant or the sheriff in a Western to protect the righteous and do battle with the forces of evil wherever and whenever they emerge. He has confronted monsters of every shape and size. An early adversary—the Dalek—a kind of malevolent pepper pot, had small boys all over the world shuffling around with their right arms held stiffly in front of them and intoning in a metallic voice: "Ex-ter-min-ate."

★ ★ ★ ★ ★ ★

Back in real life the Doctor came under attack from Mrs Mary Whitehouse, secretary of the Viewers and Listeners Association, who said that the programme was giving children nightmares. On another occasion Scotland Yard complained that a plastic killer policeman, who appeared in the series, was turning children against their neighbourhood constables.

As the programme turned into a long-running saga, it became clear that *Doctor Who* could survive even the departure of its star. It was explained that the Doctor, like all Time Lords, has the power of regenerating himself in different disguises.

In the beginning was William Hartnell, a rather crusty old gentleman whose white hair was unfashionably long for the times. Hartnell was better known for his roles as a bullying sergeant in Second World War films, but brought to the character the right note of eccentricity that was to survive to this day.

Next came Shakespearean actor Patrick Troughton. The year was 1966. John, Paul, George and Ringo from Liverpool were riding high and the new Doctor, with his check trousers and mop hairstyle, looked like an ageing Beatle, if a little more whimsical.

In 1970 actor-comedian Jon Pertwee, with his velvet smoking jacket, frilled shirt and opera cloak, brought a touch of elegance to the Tardis. The actor's real-life fascination with various forms of transport filtered into the show with such creations as Bessie, a vintage car, and the Whomobile.

Tom Baker, the plumber's mate who trained for the priesthood, could scarcely have been less like his predecessor. With his halo of curls and smile like a piano keyboard, he looked like a fugitive from the Marx Brothers. Baker, with his floppy brimmed hat, check waistcoat and extravagant scarf, perhaps identified with the Doctor more than any of his predecessors. Certainly he played the part longer than any of them.

In a strange way the famed traveller in time has himself become stuck in an era. Back in the early 1960s violence and sex were portrayed sparingly on TV screens, and in *Dr Who* this remains the policy today. Despite his two hearts, the Doctor seems to have no attraction for or towards his succession of female companions. As producer John Nathan-Turner puts it, "There's no hanky-panky in the Tardis." And although the violence entailed in his struggles against the powers of evil is often cosmic, it never seems more than is absolutely necessary and is never harrowing.

An ability to instill delicious fear is, of course, an important ingredient in the programme's attraction. When he met young fans off the set, it is said that Tom Baker used to greet them by saying, "Ah! I know you. You watch me from behind the sofa."

The Doctor, in any of his incarnations, has never been a superman. He is, on the contrary, human (if he wouldn't object to the description). Often he seems to stumble on the solution to his problems almost by accident. And that, of course, enables us all to identify with him.

The five faces of Doctor Who: Hartnell, Troughton, Pertwee, Baker and Davison

Producer John Nathan-Turner in his office

Producer

As producer, John Nathan-Turner is in overall charge of the *Doctor Who* series. Because actors, technicians and even directors come and go with each story, he has the ultimate veto on all crucial decisions. He is, indeed, responsible for everything from the opening signature tune to the style of the type used in the closing credits.

It is the producer who commissions the original script and the director who will translate it to the screen. The director, then, is responsible for the artistic presentation of the story, but John Nathan-Turner keeps a wary eye on all aspects of production, from costumes to casting. It is he who chooses the four main actors.

The producer also has his hands on the purse strings. "My last story was under budget because there was no location filming involved," he says. "So we can spend more on this one." To produce a single 25 minute episode of the show costs £44,000.

Like the Doctor himself, a producer has to work in more than one time scale. While he may, for instance, be taking a day-to-day interest in the four episodes currently in production, he must be thinking ahead to five others in prospect. Planning can begin five months before the first filming takes place.

To help him keep track of his complicated schedules, John Nathan-Turner has a board covering most of one wall of his Shepherd's Bush office. On this he records the names of the directors, technicians and actors involved in the show for 12 months, what locations will be used for filming, and when studio sessions will take place.

Although he is still only 34, John Nathan-Turner has been connected with television for almost 20 years, having worked in his holidays from King Edward School, Aston, as an extra on shows such as *Crossroads* and *Flying Swan*, which were made in Birmingham. When he left school after A-levels he found himself a lowly job playing small parts in the theatre.

After three years' persistent pressure the young John was given a job by the BBC as a floor assistant. It was good training and afforded the future producer experience of all sorts of programmes—from current affairs to comedy. Promotion brought opportunities to work on *The Pallisers*, *How Green Was My Valley*, *Angels* and *All Creatures Great and Small*. Two happy years were spent on the *Morecambe and Wise Show*.

★ ★ ★ ★ ★ ★

During production John Nathan-Turner is usually on hand to help and advise the director. One morning during the filming of "The Visitation" he saw the "rushes", or first screening of the previous day's filming, on his way out to the location. On them he noted that during a vital scene, the face of a leading character was obscured by a shadow. He pointed this out to the director and the scene was reshot in the same spot, but with different lighting.

The same day there was a fight between the Doctor and his companions and some unfriendly 17th century English villagers. In the course of the fisticuffs the Doctor steps on the prone body of one of his adversaries. Immediately alarm bells rang for the producer and he suggested that the scene should be shot again.

Violence is a constant source of anxiety for John Nathan-Turner, who has to strike a balance between diluting the excitement of the series and giving his younger viewers nightmares. "One can only go on instinct," he says. "The moment the Doctor stepped on that man's chest I felt uneasy." If he is offended, perhaps others will be also, he suggests. Another taboo is the use of bad language. You are not likely to hear characters swearing in *Doctor Who*.

Romance, too, never flowers in the close-knit community of the Tardis. "I don't think that children, or the public at large, would like it if the Doctor had a relationship with one of his companions or even another character," says John Nathan-Turner. "I don't quite know why." He thinks it is perhaps because nearly every other science-fiction hero they see does. "Superman has Lois Lane and Buck Rogers has a lot of girl hangers-on."

Some time ago the producer felt that after so many years the programme's incidental music was sounding jaded, and so the musical wizards at the Radiophonics Workshop were asked to update it.

In addition to his executive responsibilities, John Nathan-Turner, as producer, is high priest of the *Doctor Who* legend and keeper of the scriptures. He must ensure that script writers do not stray from the historic basis of the programme and that there is continuity with past series. Actors such as the Doctor and his companions must behave consistently. Their costumes and make-up must not vary. The Tardis, too, must not vary in its performance. The noise that accompanies its materialisation and dematerialisation, for instance, must be consistent.

Nothing escapes the producer's eagle eye. It is now possible to buy *Doctor Who* Easter Eggs, transistor radios, soap, T-shirts, briefs and scarves, not to mention Tardis tea caddies and money boxes and battery-operated Daleks and K-9s. All these he scrutinises before the BBC gives permission for their manufacture.

And, as if that were not enough, the producer has to read the contents of the *Doctor Who* books and annuals and the popular Marvel comics. Oh! yes. He also liaises with the officers of the Doctor Who Appreciation Society.

The star

At the end of the final episode in "Logopolis", a 1981 *Doctor Who* story, the Doctor is fighting to prevent his arch enemy, the Master, from transmitting a signal, which we are told could mean the end of the universe. They are struggling on a gantry and the Doctor succeeds in avoiding disaster, but falls to the ground injuring himself seriously.

The Watcher, a shadowy white figure who has been hovering nearby, approaches and melts into the body of the Doctor like a chrysalis. As the anxious companions look on, a strange reincarnation takes place. First the features of Tom Baker dissolve. And when they reform they have been transformed miraculously into those of young Tristan Farnon, the third member of that Yorkshire veterinary partnership featured in TV's *All Creatures Great and Small.*

His role as Tristan, brash younger brother of long-suffering Siegfried Farnon, brought 30-year-old Peter Davison great personal success and a high degree of public recognition. Wherever he went in private life, people expected him to drink gallons of beer and generally behave as Tristan would. Now, as the fifth Doctor, he is experiencing another boost to his popularity and a further attack on his privacy.

★ ★ ★ ★ ★ ★

It never crossed Peter Davison's mind to see himself in the role of the eccentric Doctor. Even after John Nathan-Turner had approached him, he still thought he was an unlikely choice. "It would never have occurred to me that I should even be considered for it."

Faced with the task of finding a replacement for Tom Baker, the producer had been gazing idly at the office notice board on which he has, among other things, photographs of actors and actresses he has worked with. A few years earlier John Nathan-Turner had been a production unit

A touch of eccentricity for Peter Davison

manager on *All Creatures.* "Bang! It hit me," he recalls. A face leapt out at him from the board.

The producer rang his former colleague at home on a Saturday morning and asked him how he would fancy being the new Doctor Who. There was a very long pause, during which time he could hear Mrs Davison, better known as actress Sandra Dickinson, shouting from the kitchen, "I want to be your companion!"

"Can I sleep on it?" the surprised actor asked. In fact, he did not sleep that night, but tossed and turned as he considered the advantages and problems of joining another long-running series.

"It wasn't so much wrong as just an extraordinary idea." He simply could not see himself playing the part. Then he recalled that at first he had never been able to see himself as Tristan and had worried about that.

To a certain extent he was overawed by memories of his predecessor. Then he realised that he could not hope to be like Tom Baker and anyway should not try to be. He would have to play the role his way.

He has been helped, needless to say, by the clothes he wears. The new costume was devised by the producer and the costume department with promptings from the star himself. "It seemed to me that in many ways the Doctor is essentially English," says Peter Davison. What could be more English than a cricket sweater? "And I am fairly keen on cricket," he admits with a smile. "I used to support Sussex like crazy and I play for a Showbiz XI on Sunday afternoons."

Even the striped pyjama-style trousers he wears are the kind worn by cricketers at the turn of the century, according to the costume department. A panama hat with a red band and a Regency frock coat with matching piping add just the right touch of eccentricity.

★ ★ ★ ★ ★ ★

Peter Davison has tried not to be too influenced by recollections of Hartnell, Troughton, Pertwee and Baker. "You've simply got to do it your own way," he says. "I felt the only thing to do was ignore the fact that there had been these four others." It had to be remembered, he concedes, that the Doctor was meant to be the same essential person although in different disguises. And so he sought to keep in mind elements of previous performances. It was a matter of personal judgement.

Fortunately, perhaps, he is just old enough to have memories of the Doctor in all his incarnations. As a bold 12-year-old he watched William Hartnell while his sister cowered behind the sofa or hid her head beneath the cushions, he recalls. "I used to be frightened, too, but there's no doubt that this is an essential part of it." Although he missed the very first episode, he watched it fairly constantly afterwards.

Peter Davison, who trained at the Central School of Speech and Drama before joining the Nottingham Playhouse, does not plan to identify himself with the character of the Doctor too strongly outside the studio. "I don't want to be Doctor Who all the time." He does not, for example, plan to stop other acting work and has continued to appear in TV shows such as *Sink or Swim*.

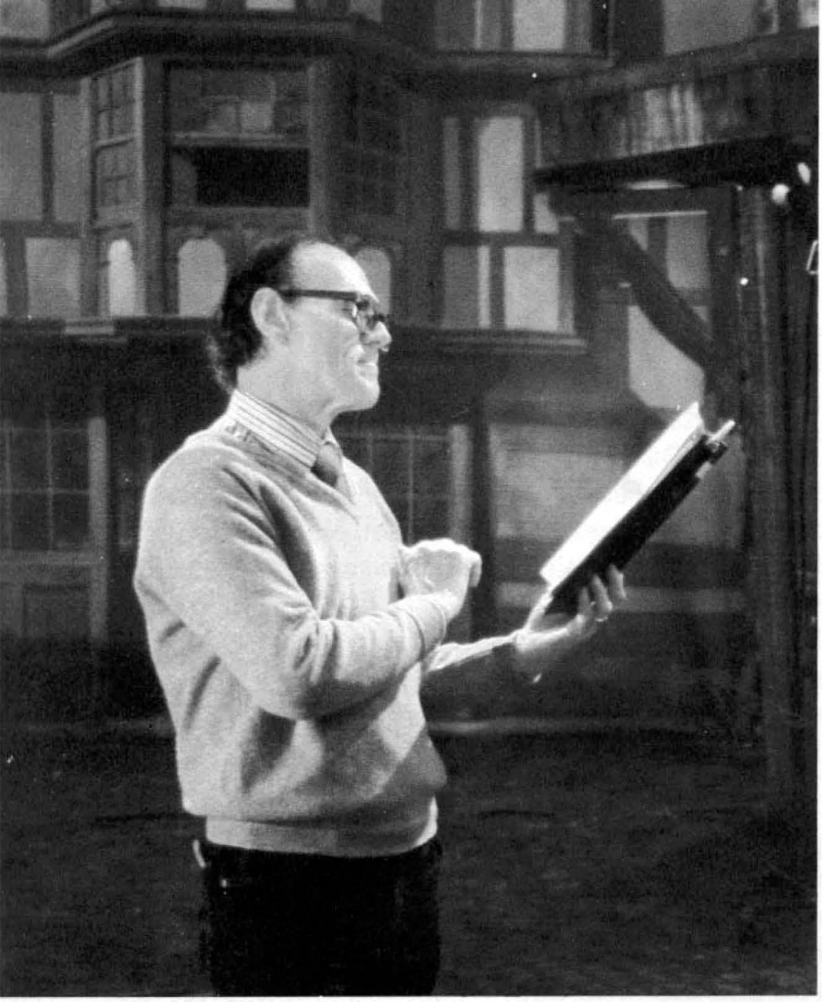
Peter Davison does, however, see himself playing the part of the Doctor for quite some time. "You have to do it for a fair length of time to get the best out of it," he says. "But then there comes a time when it begins to tail off and both you and the programme gain less and less out of each other."

Director

"I am a camera," says Peter Moffatt. The observation is not exactly original, but it accurately describes his method of directing. Even at rehearsals in barn-like rooms, his actors always know where the camera in use will be in the studio: it will be where the director is standing. As the actors perform he takes on the role of the camera, prowling around them and observing.

"In a nutshell, the director's job is to translate a script to the screen," he says. At the outset a director is given a script and, if he is lucky, an opportunity to meet the writer to discuss it. He then has to present the author's concept in terms of sight and sound.

A director's original concept is always being watered down, Peter Moffatt finds, because of



Director Peter Moffatt

considerations of money, time and other factors. "You might feel a scene should be shot in Italy, but they tell you it will have to be done in the studio." However, he admits the constant trimming of ideas is good for self-discipline.

The artistic differences between making a film and making a TV programme are minimal, but the techniques are quite diverse, says the director, who had made one *Doctor Who* story before "The Visitation". "Planning for TV has to be much more meticulous, because you can't come back to the studio and reshoot tomorrow if something goes wrong. There will be another show there."

Consequently, a TV director does not have the time to indulge in large-scale rethinks during production. "You have a studio full of people waiting, who aren't allowed to do overtime." But barring strikes, lockouts and wars, things should not go wrong if you have done your planning properly. During the first series of *All Creatures*, which he directed, Peter Moffatt even sketched in the positions of the cows on his plans of sets, so he would know how a scene was going to look.

Planning begins with the script. "I read the script three times before I even start to cast it." Adaptability is vital. An actor's interpretation of a part often turns out to be quite different from the director's.

Peter Moffatt himself started out as an actor and feels that directors should not be let loose on drama productions until they have served such an apprenticeship. "Having been a small part actor, I know how you feel when the director is lavishing all his attention on the stars and you are being ignored."

For his part, he is always ready to listen to anyone who feels uncomfortable in his or her role or has an idea how a scene should be played. He bears little resemblance to the caricature director who strides about the set with megaphone and riding boots. Instead, on location or in the studio, he moves quietly and efficiently from scene to scene with a minimum of fuss. During the inevitable hold-ups in productions he may often be seen tackling the "Daily Telegraph" cross-word.

★ ★ ★ ★ ★ ★

From the author's script the director devises his camera script. "This is the Bible once you get into the studio," says Peter Moffatt. The camera script records in meticulous detail the location of a scene, the characters involved, the action, the number of shots it is broken into and, lastly, which of the five cameras available will shoot each shot.

Some directors leave the camera script until the night before they go into the studio, but that is not Peter Moffatt's style. "Before I start the first read-though with the actors, I've done the entire camera script," he says. Scene by scene he visualises the actors' moves and how best to shoot them.

The camera script is done about four times. He changes and changes it, but always keeps it up to date, with the latest alterations recorded. "If I

The director confers with his cameraman

die now the person who takes over will be able to understand what we are doing." It does not matter how many times the script is altered, he says. "All that matters is what happens on the screen."

Where many of his colleagues would direct a recording from the studio floor, Peter Moffatt prefers to preside from the gallery, where he can see from the bank of monitors before him the alternative pictures available at any moment.

"I'm like a puppeteer pulling the strings," he says. He is not a dictator, but a co-ordinator of the expertise of artists and technicians, turning them into magic. His most important role during recordings is to keep the studio calm. "Once a director starts raising his voice, he lowers the efficiency of his team."

When he was directing in the theatre, his job was virtually over when the curtain went up and the actors began doing their work. In television the director's work continues for weeks after the studio lights are dimmed and the actors have removed their make-up.

It is only then that he begins assembling his jigsaw from the various pieces. In the editing room for "The Visitation", for instance, the jigsaw pieces for the first four episodes consisted of 25 spools of videotape each running for 90 minutes and costing £100. (In the early days of *Doctor Who*, an entire episode of the show was produced for £2,500.)

Apart from cutting and assembling his four episodes from these spools, Peter Moffatt has to supervise sessions at which what he calls the

technical tricks—the visual and electronic effects which are so much a part of *Doctor Who*—are added.

"There's a lot of trickery," he says. "But apart from that, *Doctor Who* stories are fairy tales, aren't they?" The good fairies fight the bad fairies and the good fairies always win and the bad die. "And that is what life should be like."

Next come the sypher sessions at which sound effects are added. When a barn door that is really only painted plywood closes with a click, the technicians have to dub a resounding bang on to the sound track. And when the firing of a gun results in a resounding pop, a loud report has to be grafted on.

Only when this has been completed does the background music composer, Paddy Kingsland, see the edited videotape. With the director he agrees the moments when an effect can be heightened by the use of music. He then goes away, writes the exact number of seconds of music, which is recorded in the Radiophonics Workshop and dubbed on to the last track of the tape.

Peter Moffatt is not a great believer in the use of background music, but he concedes that in *Doctor Who* incidental music is a long-standing tradition. Not until the last frenzied chords have been dubbed on to the final episode will his task be finished.

Script writer

"The Visitation" tells of the arrival in 17th century England of a group of aliens who have escaped from a prison planet. The invaders plan to take over the world after killing off its population with plague-carrying rats.

Script writer Eric Saward conceived the plot after his girlfriend, who was studying the period, mentioned to him that the black rat became almost extinct in England after the Great Fire of London. "This set me thinking," he says. "Why did that happen?"

The former schoolteacher, who had already been approached by the *Doctor Who* script editor, turned his idea into a three- or four-page storyline and presented it to him. "Then I was commissioned to do a scene breakdown—an extended version of the storyline, but setting out in detail how the story is going to be told."

This done, Eric Saward was asked to write the complete script. "I hadn't written anything for TV before, but I had done a great deal for radio," he says. "And anyway *Doctor Who* is a show with a reputation for encouraging young writers."

★ ★ ★ ★ ★ ★

Admitting that he had not watched *Doctor Who* regularly for two or three years, Eric Saward says he was lucky that a summer series of repeats was being transmitted which gave him an opportunity of acquainting himself with the format. "The style of telling *Doctor Who* is specific," he says. "*Who* tends to be a fast-moving show with short scenes and lots of action."

An additional complication for the new script writer was the fact that he was plotting for a new Doctor, and two new companions who had not even been cast at the time. Although he understood that the producer, in casting a younger man, wanted to bring out a more heroic side of the character, he did not know exactly how Peter Davison would play the role.

Writing a single story for an established series is not at all the same as writing an original TV

THE SENDING OF THIS SCRIPT DOES NOT CONSTITUTE AN OFFER OF A CONTRACT FOR ANY PART IN IT

Rehearsal Script
BBc-1 Colour

Pro

"DOCTOR WHO"

SERIAL 5X

EPISODE 3: 'The Vis

by

Eric Saward

Producer .....
Director .....
Designer .....
Script Editor .....
Production Associate ...
Production Manager .....
A.F.M. .....
Production Assistant ...
Costume Designer .....
Make-Up Artist .....
Visual Effects Designer
T.M.1. .....
Sound Supervisor .....
Video Effects .....
Music by .....
Special Sound .....

FILMING: 5th - 8th May 1981

OUTSIDE REHEARSAL: 11th May
23rd May

CAMERA REHEARSAL & RECORDING:

TRANSMISSION: 4th IN TRANSMI

12. INT. TARDIS CONSOLE ROOM. DAY.

(THE DOCTOR AND ADRIC STAND BEFORE THE CONSOLE.

ADRIC IS WORKING OUT SOME CALCULATIONS.

THE CENTRAL COLUMN STOPS)

THE DOCTOR: Earth. Heathrow 1981. Not one of the most stimulating places in the Universe, but, nevertheless, where requested to be.

(HE OPERATES THE SCANNER CONTROL, BUT INSTEAD OF AN AIRPORT THERE ARE TREES)

Oh.

(TEGAN ENTERS AND POINTS AT THE SCANNER)

TEGAN: Is that supposed to be Heathrow?

ADRIC: (FINISHING HIS CALCULATIONS) It is.

TEGAN: Well, they've certainly let the grass grow since I was last here.

drama. For a start, the main characters are not your own, but stock characters bequeathed to you by your predecessors. And then there is the need to break your narrative into four short episodes with a strong cliff-hanger at the end of the first three and an ultimate victory for the Doctor at the conclusion.

The best *Doctor Who* stories, he thinks, have always been those that have taken the format and turned it on its head with an original idea. One of the tasks Eric Saward was asked to do in the course of his story was to "write out" the Doctor's sonic screwdriver, a piece of magical technology that was turning into an easy cop-out for successive script writers, who were relying on it and not their own inventiveness to get the Doctor out of a tight corner. "If I get the Doctor into a dangerous situation, I must think of an exciting, interesting and preferably original way of getting him out of it."

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At first sight an actual script appears very loose. In "The Visitation", for instance, it takes three pages to reach the first word of dialogue: "Papa!" An entire page written in capital letters is given over to a description of the night sky and a strange light. "A lot of your descriptive work is to help the director and to clarify what is going on around," says Eric Saward.

For the sake of clarity the descriptive material is written in capital letters and the dialogue in the normal way. The director will attempt to depict what you have described."

When we read a descriptive passage in a novel, we convert the words into images in our heads, he points out. On television a director has to do that for his audience. "If you want the story to come over as you see it, you must give him as much help as possible."

A script writer has to tell his story through dialogue. "People say things because they are reacting to what is happening all around them." The trick is to make the dialogue hang together. When a manuscript arrives in the *Doctor Who* Office, from a would-be script writer the first thing they want to know is whether he can write dialogue.

What then makes a good script?—"Page one of a good script makes you want to read page two," says Eric Saward simply. "That's the essence." If a script is not interesting as you read it on the page, there is no way anybody—director, producer or actors—is going to make it come alive for you later.

Companions

The Tardis has not always been an ideal vehicle for transporting the Doctor's companions to fame and fortune. To date there have been 23 companions and while some have ended up among the stars, others have been lost without trace after quitting the inter-planetary police box.

In real life Lalla Ward, who played Romana on the screen, married her Doctor—Tom Baker. Peter Purves, after playing Steven Taylor, boarded *Blue Peter* and Jean Marsh, the actress who took the role of Sara Kingdon in 1965, went on to dream up and play the part of Rose in *Upstairs Downstairs*. These have, sadly, been exceptions.

It has often been said that the only qualifications needed by a companion are the ability to run down corridors and to say, "What do we do now, Doctor?" But times change even in the Tardis and women's lib, too, may have helped to change the status of the companion.

Companions Janet, top, Matthew and Sarah

Tegan Jovanka, the trainee air hostess who currently finds herself aboard the Tardis after having been inadvertently hijacked by the Doctor, is no shrinking violet. On the contrary, she is brash and even aggressive.

"This is a departure for the companions," says Janet Fielding, who plays Tegan. "In the past they have all been well-spoken English girls and I'm a fractious Australian." Fractious she may not be in real life, but Australian she certainly is—the daughter of a scientist.

She spent part of her schooldays in America, before graduating in English at Queensland University. Although by no means a TV addict as a child, she clearly recalls William Hartnell as the first Doctor. "I remember being terrified," she says. "It was terribly scarey."

As journalism played a large part in her degree course Janet Fielding planned to become a reporter with the Australian Broadcasting Company before deciding on a career in acting. She came to Britain and was in an actor's co-operative when she heard of a vacancy with *Doctor Who*.

★ ★ ★ ★ ★ ★

After a number of interviews and auditions, the producer seemed to approve of her, but asked if she would mind changing the colour of her hair. "I think it was because Matthew and I both have dark hair and we might look like brother and sister."

Matthew Waterhouse plays Adric, currently senior companion aboard the Tardis. Adric is 15 and an ex-member of a street gang on the planet Alzarius, but Matthew is 20 and the son of a solicitor from Haywards Heath. A long-standing *Doctor Who* fan, he admits that he first wanted to become an actor so that he could play the Doctor.

When he heard of the search for a male companion, he applied, but did not dare tell the producer at his audition that he was actually a member of the Doctor Who Appreciation Society in case he was not taken seriously. "I think he would have killed me if he had known."

Nowadays he likes being recognised by younger fans. "Children can't see the difference between Matthew and Adric," he says. "In fact, they don't know there is such a person as Matthew Waterhouse." Being recognised by adults is not fun, he finds. "They are either too serious or patronising."

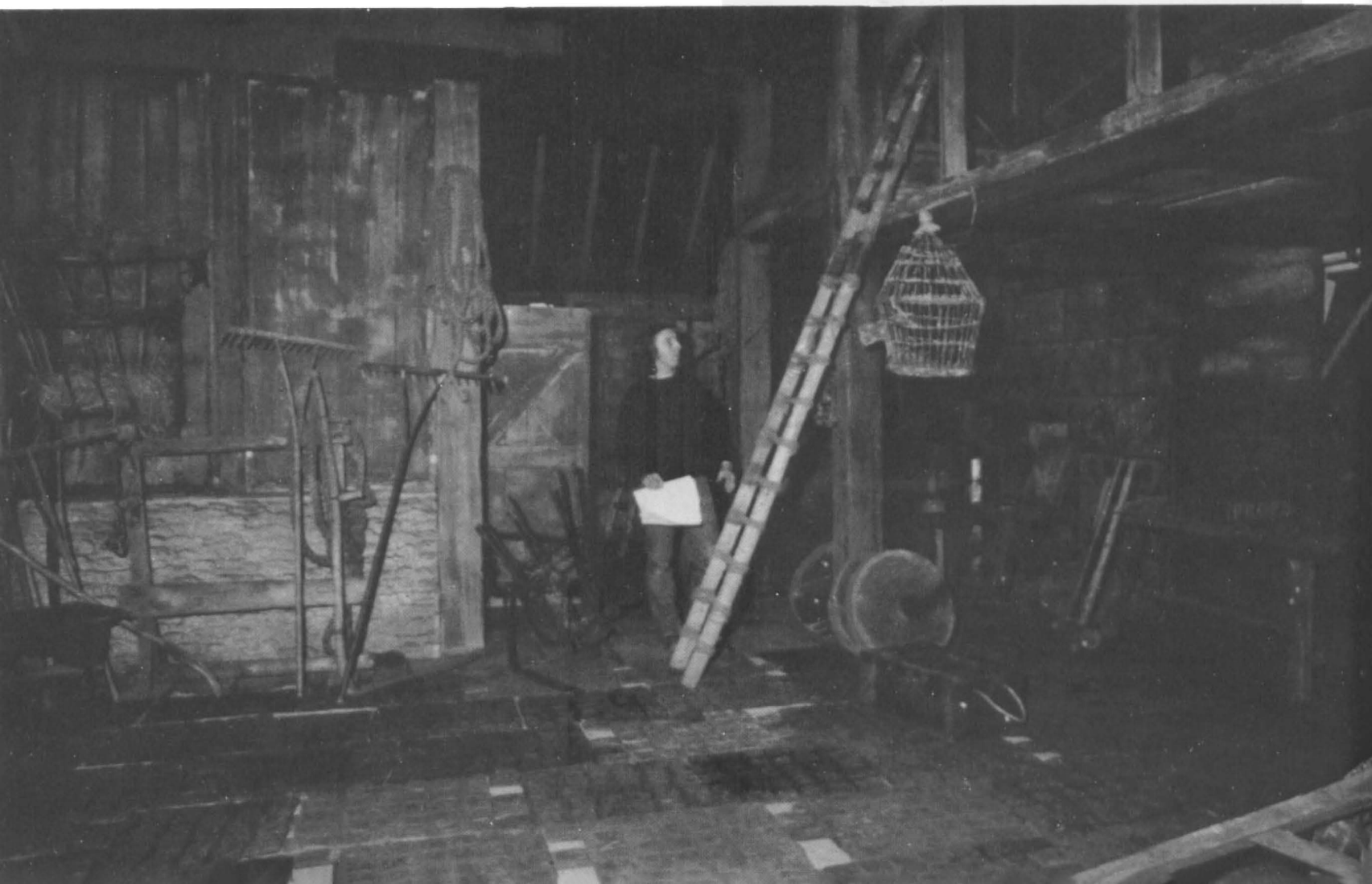
While he is very grateful for the opportunity *Doctor Who* has given him after only one small part in *To Serve Them All My Days*, Matthew Waterhouse realises that he cannot go on travelling around the universe in a police box forever.

Nyssa is the daughter of Tremas, Consul of the Empire of Traken, and he schooled her in the advanced sciences, including bioelectronics. Sarah Sutton, who plays her, is more interested in dancing and painting than the advanced sciences. Indeed, she studied to be a dancer from an early age and has been acting since the age of nine. She must have been well prepared for the unexpected happenings in *Doctor Who* by her role as Alice in BBC TV's *Alice Through the Looking Glass.*

At 20 she is still a part-time student at the Guildhall School of Music and Drama and her *Doctor Who* memories go no further back than Jon Pertwee. At boarding school she missed a lot of the series because Saturdays were the only days she and the other pupils were allowed to go out. In 1980 she was sitting under a palm tree on a Barbados beach and wondering what sort of role she would find herself in next. "I'd like to do something like *Doctor Who*," she remembers thinking. A few days after she had returned from her Caribbean holiday her agent wrote telling her of an audition for the role of Nyssa. She remembered her thoughts on the beach and decided they must have been a good omen. They certainly were.

Designer

Set designers like working on *Doctor Who* because it releases them from the customary demands for factual accuracy. "You can let your imagination run riot," says Ken Starkey. So, when



he heard he had been assigned to the show he naturally had visions of creating futuristic sets on faraway planets. Imagine his surprise, then, when he read the script of "The Visitation" and discovered that it was set in 17th century England.

His second surprise—or shock—was to learn that he had just one day's shooting in the Ealing film studio to recreate the Great Fire of London. As the actual blaze raged for days and destroyed an estimated 13,000 buildings in the city, the idea of representing it in an eight-hour day minus one lunchtime and two tea-breaks—was daunting. He expressed these anxieties to the director at the outset and a rather less ambitious shooting schedule was agreed.

In addition to the sequences in the film studio, Ken Starkey was reponsible for sets on outdoor locations and in the recording studio. Having found what the director had in mind on all these fronts and brushed up his knowledge of 17th century architecture, he began work on preliminary plans for the various sets. These ranged from a bakehouse in London's ill-fated Pudding Lane to a spacecraft capsule. In both these cases—one on location and the other at the TV Centre—he decided to employ an artist to paint a glass shot (See Special effects) to save time and money.

★ ★ ★ ★ ★ ★

Not until the first plans have been agreed with the director does a designer get down to more detailed work. When necessary, delicate scale models are constructed so that all concerned can ensure that the sets actually work. They have, after all, not only to accommodate the action of the story, but to be accessible to bulky cameras and the sound booms.

If it is true to say that a designer's work begins with doodling vague ideas on a drawing board, it certainly does not end there. Ken Starkey is responsible for costing his dreams in terms of man-hours and materials and then for seeing them through to construction.

This involves finding out what scenery the BBC has in stock and then visiting firms of scenery suppliers to supplement it. "From the two you construct a giant Lego set," says the designer. One supplier of mediaeval sets he uses has his wares built into an authentic street, through which prospective buyers may stroll and make their choice.

Most depressing moment for a designer is when he walks through a studio door at 7.30 on the morning before a recording session and surveys what appears to be a pile of rubbish in the middle of the floor. The "rubbish" is the set he has conceived and which has to be erected and lit in a day.

It is now that the accuracy of the scale plans on which he has devoted so much time and care pays off. Mistakes can be expensive in terms of delay. For Ken Starkey everything went well, but even so he estimates that £37,000 were spent on sets for "The Visitation."

Even on location, where a more or less authentic Elizabethan house was available, the designer has to make sure that he has spotted and disguised any telltale evidence of the 20th century. An electric lamp outside the front door had to be temporarily removed and a burglar alarm hidden from view. "Ivy is the designer's friend," says Ken Starkey, who never goes on location without a bag of plastic ivy to trail over camera cables and other objects. When a rack of scaffolding behind the Elizabethan house proved too big to be covered with the all-purpose ivy, designer Starkey ingeniously built a "woodshed" around it.

Apart from visualising the architectural settings for a drama, the designer is responsible for furnishing it and finally for providing the props which so often lend a realistic atmosphere. "The major part of my work is organising the bits and pieces to come together," he says. A modest assessment of his creative role.

Designer Ken Starkey inspects a studio set

Overleaf: London's burning

POLICE

Location

The scene is TV Centre and the time is 6.30 am: Enter Sarah Sutton who is arriving at this bleak hour to have her hair washed and set and to be made up. Who said an actress's life is all glamour? The make-up artists in their brightly lit basement rooms are already at work and have a rota of actors and actresses to deal with between now and 8 o'clock.

In the foyer members of the crew are gathering. "I've just done something with Burton, darling," says one of the dressers to a colleague he has obviously not seen for some time.

"Oh really," his friend replies. "Richard?"

"No. Montagu, the tailors."

Assistant floor manager Alison Symington is reading a morning paper and checking in members of the cast and crew as they arrive. The actors disappear into the Centre wearing jeans and sweaters and emerge bewigged and in thigh-length boots or peasant smocks.

Suddenly the foyer is filled with a high pitched sci-fi bleeping. It could be a scene from today's shooting schedule. "This is a test of the public address system to all sections at Lime Grove," says a metallic voice not unlike that of a Dalek.

Everyone settles back into their arm chairs to await the arrival of the coach which will take them to the location. When it arrives there is plenty of room, as a number of people have made their own way out.

To early morning commuters in the streets of West London the coach and its passengers must

present a curious sight. Smocked yokels sit reading their newspapers. Janet Fielding and Sarah Sutton are still wearing hair nets and curlers and are surrounded by 17th century costumes suspended from the luggage rack on hangers. Actor Peter Van Dissel, who crunches around inside the Android, is reading a Martin Amis paperback and members of the make-up department are sharing a flask of coffee in the back seat and chatting.

For the coach driver and those making their way independently to the location there are maps indicating all the sites to be used. Where actors and technicians working on such Mediterranean sagas as *Who Pays the Ferryman?* and *The Aphrodite Inheritance* find themselves in scorching sunshine on sandy beaches, their counterparts on *Doctor Who* rarely find themselves more than 30 miles from the Television Centre. It is ironic that a show that travels light years through space rarely quits the Home Counties. As John Nathan-Turner jokingly points out, it also accounts for all those occasions when the Doctor says nonchalantly to a companion, "It's amazing how much like Earth this planet appears."

As "The Visitation" is set in the area of Heathrow anyway, the embargo on exotic locations is not important, though the recurring sounds from the airport are a problem, as the period is supposed to be more than 200 years before the invention of the aeroplane.

Just 25 minutes late the coach arrives at its rural location. Not bad when you consider you have travelled back three centuries to the time of the Great Fire of London. The location itself is like a small military camp. Catering staff are already serving tea and coffee through a trap door in the side of their van. In another corner of the field stands the "honey wagon", as the mobile loo is known. A costume and make-up wagon and an electricity generator complete the line-up.

Peter Davison arrives, not in the Tardis, but in a brown Volkswagen Scirocco. While he is changing, the camera crew are setting up their equipment. The first scene to be shot is of the Doctor arriving at a beautiful manor house. It is to be a tracking shot: that is to say, the camera will back away from the Doctor, keeping pace with him as he walks. Temporary sleepers and rails have to be laid to accommodate the camera bogie.

Michael Robbins, who plays the part of an actor-turned-highwayman, but is better known for his comedy role in *On the Buses*, rehearses the scene with Peter Davison before shooting begins. Thanks to the interventions of a lawn mower and a helicopter, the scene has to be shot three times before the director is happy, but then the team moves swiftly to the front door of the house for the next scene.

Time for a tea break on location

If you had written a *Doctor Who* script, you would be mystified by what happens on location to your carefully thought-out plot. Events are not filmed in narrative order. This morning, for instance, the director is shooting scenes from the first and fourth episodes of the story within minutes of each other. In this case it is because both involve the use of a horse and cart, which are hired by the day.

In the brief interval while the cameraman is setting up his next shot, highwayman Robbins sits on a large stone, opens his powder pouch and fishes out a packet of American cigarettes. The make-up artists use the break to do repair work to faces and wigs.

Cameraman Chapman sets up a tracking shot

Cameraman Peter Chapman began taking still photographs with a Box Brownie, but has gone on to become one of the most sought after operators. He has worked recently on *Shoestring*, *When the Boat Comes In* and *Blue Peter* as well as many documentary and feature programmes.

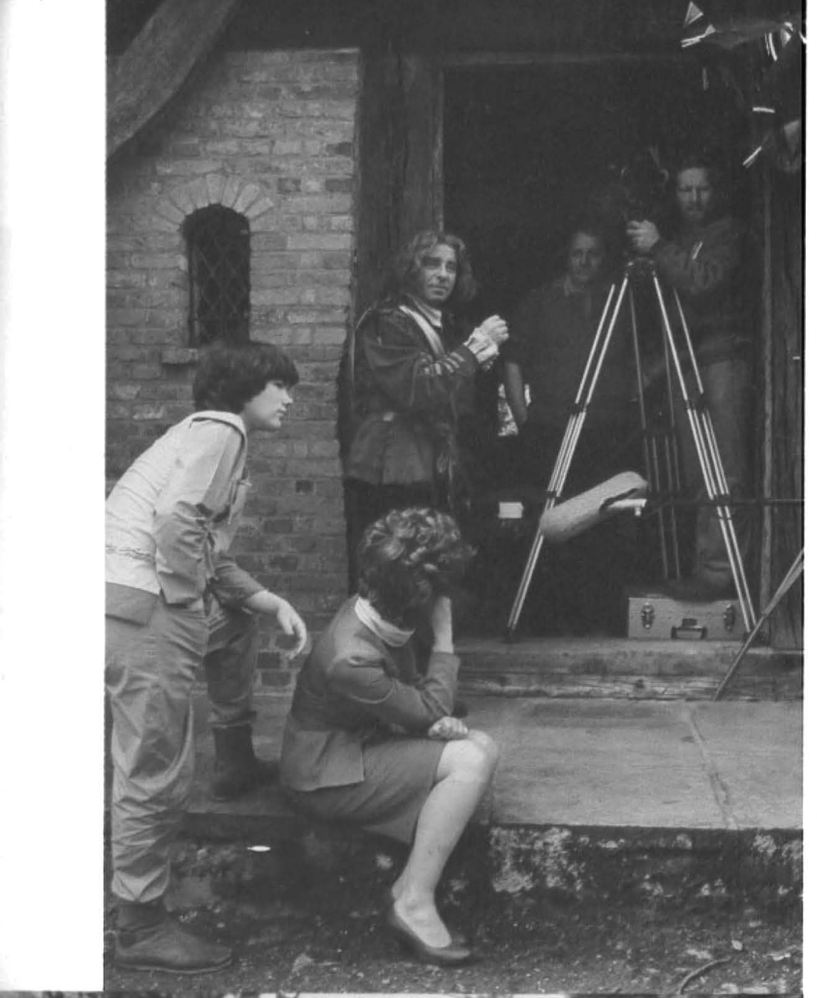
"The writer has a story to tell," says the cameraman. The director comes along with ideas on how to tell it and his job is to translate those ideas into the actual pictures the viewer sees. Technically, he says, he is the director's eyes. He has to know which lens to use for close-ups and which filters to use in varying light conditions. All the film he shoots on location is later transferred on to videotape before it is cut into the studio tape.

A small but important trap that the cameraman must avoid is allowing actors to "cross the line." If, for instance, he is filming separate head shots of two people who are supposed to be holding a conversation, one must always be facing left and the other right.

A monster meal for actor Michael Melia

Otherwise, when the two sections are joined and inter-cut it will look as though one person is talking to the back of the other's head and the second is ignoring him.

It is noticeable that while he is shooting a scene, the cameraman is not always concentrating on the central action. "You almost have to leave the actors to do their thing in the middle of the frame while you watch the edges." It is important



No time is lost setting up the next shot

for him to ensure that no one's head goes out of the frame, or, equally disastrous, something unwanted—such as a passing car—does not creep in.

Part of a cameraman's job is to be an encyclopaedia of ways to do things and answers to problems. After a lifetime in the business Peter Chapman's knowledge and experience are stored up and at the disposal of the director. "It is his job to ferret out as much as he can by asking for the impossible," says Peter Chapman.

If he is the director's eyes on this location, then sound recordist Stan Nightingale is his ears. Once, during shooting outside the manor house, when Peter Moffatt was satisfied with a take, Stan Nightingale said he was afraid the noise from the passing aeroplane was loud enough to be identified.

The director, who had obviously been concentrating on the action, said that there had not been a plane. Most people on the location would have agreed with him. And so they replayed the sound track and there for all to hear was the clear hum of a passing plane.

★ ★ ★ ★ ★ ★

A sound recordist, with his tape recorder hanging round his neck like a barrel organ, and his boom operator, carrying a gun mike at the end of a long rod, trudge around a location like siamese twins. They are united by the microphone cable.

Their task is to separate voices, which the viewers want to hear, from background noises, which they do not. "You have to produce what you think you hear rather than what you do hear," says the sound recordist. "We all have a built-in selection mechanism in our minds," he adds. "If you did hear all the noise going on around you at its true level, you'd go totally barmy in a short time."

A brief hold-up for highwayman Michael Robbins

Close encounter of a new kind

When someone is holding a conversation in a noisy place, for example, his mind concentrates on the voice of the other person to the exclusion of the background interruptions. "Unfortunately the microphone cannot do this. It is purely a transfuser: it changes pressure waves into electrical impulses."

Ironically, if the director wanted Doctor Who to have a conversation in a field where birds were singing, he would record the dialogue in a field where there were no birds. The technicians would dub on the sound of birdsong in the studio later. In this way they would be able to control the comparative level of the two sounds.

The sound recordist also has to ensure that if an actor goes away from the camera he recedes in sound as well as visually. "Sound exists on a square law principle," says Stan Nightingale. "So if a person goes 3 feet away from the mike, it sounds like he has gone 9 feet." The experienced sound recordist will know where to split the difference and place his microphone. Then it will be up to the boom operator to ensure that it is not in the picture.

Boom operator eavesdropping with his mike

Gun microphones have a narrow area of acceptance: that is to say they pick up sounds from only one general direction. This can prove awkward because the background noises will change every time you reposition the mike. The real problem arises when the tape is being cut together and the director finds that his background sound is going up and down illogically.

Back in the make-up wagon actor Michael Melia, who plays the Terileptil leader, is not worried about such abstract problems. He is having his claws painted a gory shade of red. Better known for his tough guy roles in shows such as *Hazell*, *Minder* and *The Chinese Detective*, he blames his broken nose for being typecast as the "heavy". "It's very nice for the money," he says, "but you get bored beating people up." And so

Crew members enjoy a three-course lunch

he has joined *Doctor Who*, where he is still frightening people. It is a welcome change in one sense, though. "My young nephews are over the moon," he says. "It's the first time I will have been on at a time when they can watch."

During the lunch break he finds out how difficult it is for a Terileptil to eat with his claws. According to union rules the BBC has to provide the crew with a proper meal every five hours. Today there is a choice of three main courses, a sweet and coffee or tea. After they have eaten, less conspicuous members of the cast head for the village pub.

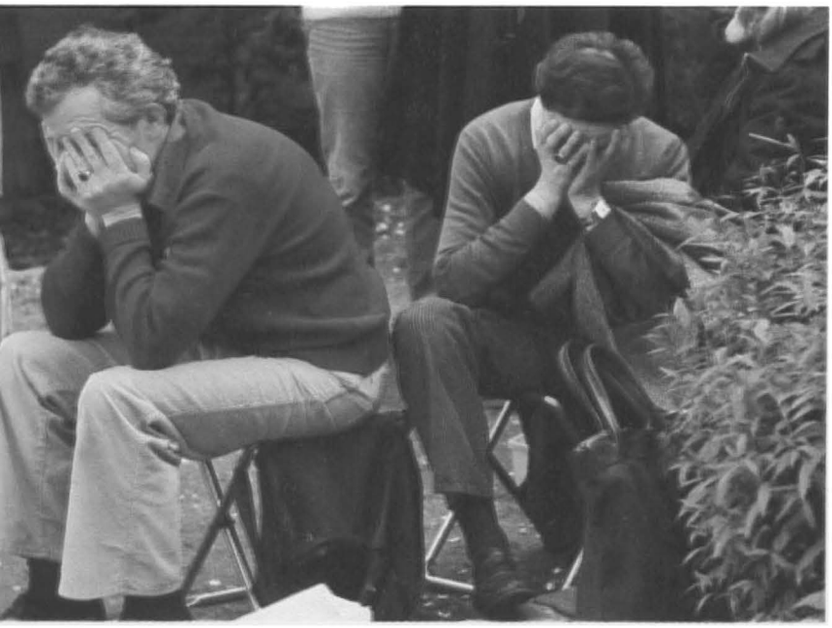
★ ★ ★ ★ ★ ★

After lunch it's straight back to work. "Quiet please," says Ros Parker, the production manager. "We're going for a take." Peter Moffatt says "Action!" and the camera rolls. When the scene, which involves the Terileptil now wearing his lizard-like head, is over, the production manager says "Check the gate" and the assistant cameraman ensures that nothing has obscured the lens.

There is a short interruption in filming while Tegan, who is wearing an illuminated bracelet, has a battery stuck to her back. It is taped out of sight under her blouse. In the break the costume designer checks the appearance of the Android against a Polaroid shot she took at a previous location.

Before the day's filming is over, the local village bobby arrives to ask if he can have his police box back. According to the producer, it happens wherever the unit goes on location and every policeman is convinced he has made an original remark.

Another hazard after 4 pm is the arrival of inquisitive children on the way home from school. Here they are quite young and more interested in obtaining the autograph of Matthew, whom they have already seen on TV, than that of the star, who has not appeared yet.



The end of a hard day's shooting

Most people are fairly subdued on the coach back to the TV Centre. It has been a busy day for everyone, but the director has shot all he had hoped to.

Monsters

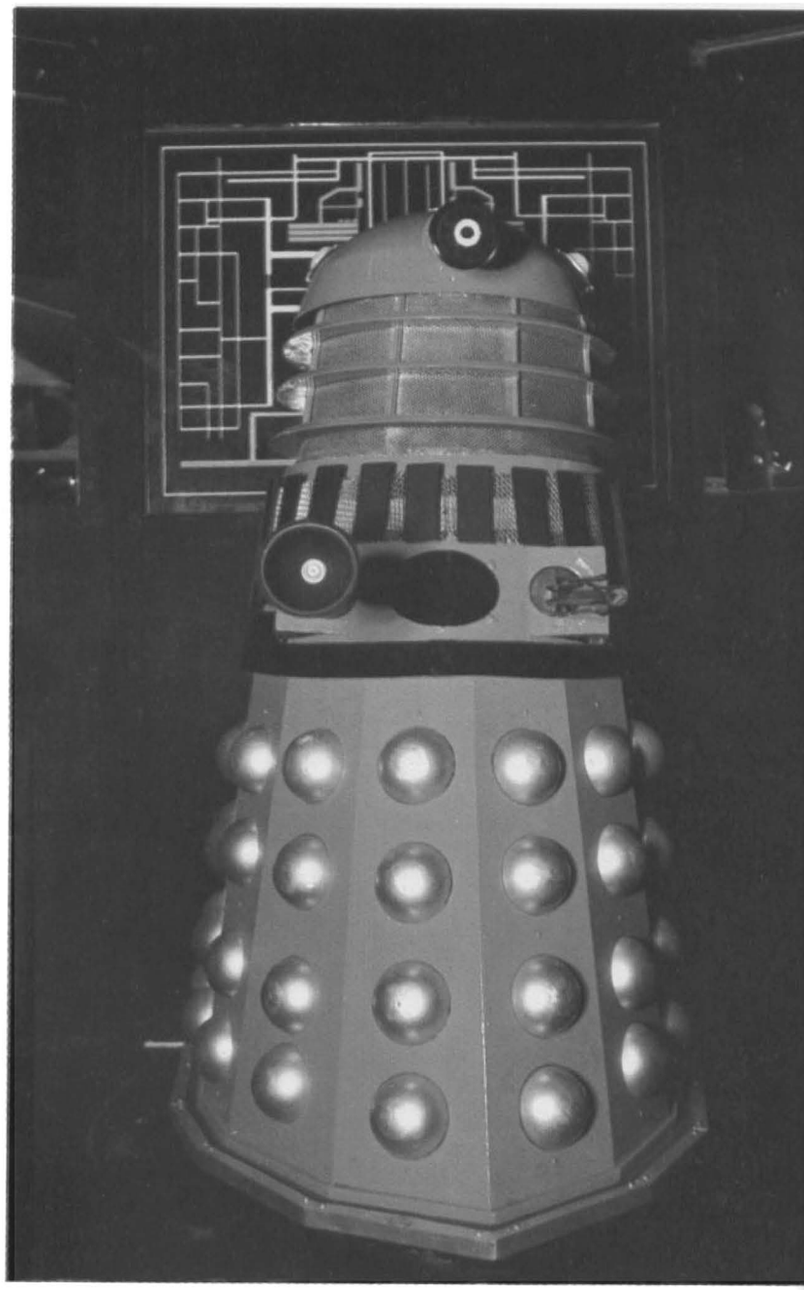
In "The Dead Planet", the first episode of a 1963 story about Skaro, a world that had been devastated by a neutron bomb, script writer Terry Nation devised a race of mutants who had lost the use of arms and legs and were obliged to live in a heavy metal casing.

From his description, which ran to only 33 words, BBC design experts produced creatures which, although defeated by the Doctor on Skaro, went on to conquer the world, or at least a good part of it. They were known as Daleks.

The Daleks looked like metal cruet sets, with domes that revolved like tank turrets. One arm looked like an egg whisk and the other like a plumber's suction plunger. They ran on castors and there was room inside for an actor, who sat down and propelled them with his feet.

Their war cry of "Ex-ter-min-ate!" spoken in a shrill metallic voice was soon echoing around every school playground in the land and far beyond. Suddenly the world was Dalek-shaped. There were Dalek sweets, Dalek soap and even Dalek lollipops. The Dalek empire expanded from the small screen to the stage and cinema and the weekly total of viewers for *Doctor Who* on TV doubled.

The Doctor probably owes his continued existence to his most famous enemies. Yet the



A Dalek – the Doctor's best known adversary

Daleks were only one of scores of monsters involved in the programme over the years. *Doctor Who* without monsters would be like ham without eggs or a roller-coaster without the dips. As Terry Nation says, children like to be frightened. And not only children, you might add.

In "The Visitation" writer Eric Saward envisaged his monsters as noble creatures of grace and beauty, but after 18 years it is not easy to devise a new being. "I thought, 'What haven't we used?' " The answer he came up with was a reptile. This could be a good idea. After all the very first villain in the Garden of Eden was a reptile.

Terileptil—the name he gave to his creature is, he admits a rip-off from reptile. "They are territorial reptiles." According to his description in the script, they are "about seven feet tall, powerfully built and have a life expectancy of about 350 years." Unfortunately, the Terileptil leader is a fugitive from the tinclavic mines on the penal planet of Raaga, where the working conditions have caused carbuncles to grow on his skin.

The robot, or Android, that is employed by the Terileptils in "The Visitation", is also beautiful, with its silver cylindrical torso and limbs. Its huge hands, though studded with precious stones, look suspiciously like cricket gloves and the ponderous feet resemble ski-boots.

There have, of course, been other mechanical men among the Doctor's adversaries. The Giant Robot looked as though it had been on a body building course to develop its steely shoulder and chest muscles. It was not essentially wicked, but rather the victim of power-crazed scientists who misused its enormous strength.

The Cybermen, on the other hand, are longtime enemies of the Doctor. They have heads rather like a pressure cooker and a distressing amount of their innards seem to be visible.

Morbius, like the Doctor, is a Time Lord. A Time Lord who has lost his head, literally. And most of his other parts, too. Solon, a sinister spare-parts surgeon, preserved the Morbius brain and provided it with a body that looks like a moth-eaten sheepskin jacket. Needless to say, he should not have bothered, as thanks to the Doctor he dies for a second time.

A Sontaran looks like a disgruntled boiled egg in a surgical collar, but should not be underrated. Even Gallifrey, the Doctor's own planet, was threatened by the Sonataran menace. Among the Doctor's more handsome opponents is the Voc-Robot, with his rather streamlined human features. The Marshman looks rather like the missing link wearing a wet suit and the Foamasi looks quite cuddly in a slimy sort of way.

★ ★ ★ ★ ★ ★

The need to dream up original monsters is a continuing challenge not only to script writers, but to the costume designers and visual effects designers. At the BBC's North Acton workshops, artists in fibreglass and foam rubber have to harness their imaginations to the ever-present twin restrictions of making something practical that does not cost too much.

Remote-controlled monsters or robots, such as K-9 are extremely expensive and so most creatures made at Acton are designed to be worn by actors and have, naturally, to follow roughly the outlines of human anatomy.

Even the heaviest "metal" armour must be light enough to be worn by the average member of Equity, the actors' union. And however grotesque the creation, the actor inside must be able to breath, see and frequently speak.

When these monsters have suffered the inevitable fate of all the Doctor's opponents, they are discarded, rarely to be seen again. Fortunately, you can still catch a glimpse of some of the most memorable monsters in BBC exhibitions at Longleat and Blackpool and in a special Madame Tussauds display in London's Baker Street.

Monster

Menagerie

Styggron
Marshman
Fendahl
Cyberman
Pirate Captain
Terileptils

Make-up

The first thing that Carolyn Perry did after reading "The Visitation" script was to go to the Museum of English Rural Life at Reading University. From past experience the make-up supervisor knew that the usual reference books would not be a great deal of use for the 17th century. "It's quite difficult to find everyday people portrayed," she says. "You nearly always find pictures of aristocrats."

At the museum she spent a day going through their books, searching for as many pictures of working people as she could find. What she discovered was that everyone wore shoulder-length hair. "That was the most common look at the time," she says. "Not many men shaved, which stands to reason because there wasn't a lot of hot water available to the poor." This meant she would be doing a lot of beards and moustaches.

The women of the period would also have had long tatty hair. "They wouldn't have had time to do anything with it," Carolyn Perry observes. Research into the period also revealed that the country was swept by more than one plague. "A person could easily be pockmarked." In fact, she says, they tended not to be a very healthy lot.

All of which pleased this particular make-up artist immensely. She had recently been responsible for *The Marti Caine Show* and many women had written in saying how much they liked the make-up and asking what she was using. She, however, is not really interested in the glamour side of the business. Having taken a fine arts degree at Bristol, she is not surprisingly more

interested in the creative side of make-up, and particularly enjoys making up men for historical scenes. "At least with men you get beards and moustaches," she says.

At the BBC's training school, where she was one of 12 successful applicants chosen from 500, Carolyn Perry learnt how to make beards and moustaches by knotting hair on fine lace. Then she learnt how to age people with latex jowls and bags under their eyes and how to make wax noses. With all this know-how, she is disappointed when there is no call for the more complex tricks of her trade. "Are you sure you wouldn't like a scar?" she asks her clients.

Like all make-up novices, she began work on extras and worked her way up to the stars. A knowledge of hairdressing is an advantage, but the job is not for girls who have done beauty therapy courses and are largely interested in looking glamorous themselves.

★ ★ ★ ★ ★ ★

As she talks, she is making up actor Richard Hampton, who is playing a leading villager. First she dabs foundation on his face and neck with the sponge, all the while checking the effect against a Polaroid photograph taken from a box-file of artists in the show. The photograph is as important a piece of equipment as her jars and brushes. Without it, she could not hope to get the same effect day after day.

From a wallet of brushes she chooses one and paints a scar on his forehead. As it happens, the scar is not called for in the script, but the actor had one when filming started and over the days it has faded. For the sake of continuity it needs to be restored to its earlier livid state.

Continuity is the most difficult aspect of her job. "Say there is a strong wind on location as the Doctor goes into the Tardis and his hair is blowing across his face," she suggests. "If his hair in the studio shot when he comes into the Tardis is immaculate, it will look ridiculous when the two shots are cut together."

Richard Hampton's nails are too clean for a village blacksmith, so she dirties them. And his teeth are too well preserved for any 17th century peasant, so she paints them with nicotine-coloured enamel to crack them up. Next she dabs his hands and forearms with foundation to make him looked tanned.

To anchor a shoulder-length wig to his head, Carolyn Perry puts some pin curls in his own hair. Finally a moustache and thumb-piece are added. A thumb-piece is a small beard on the lower lip. At the last moment she notices white skin peeping through the actor's eyebrows and so tan has to be rubbed in vigorously.

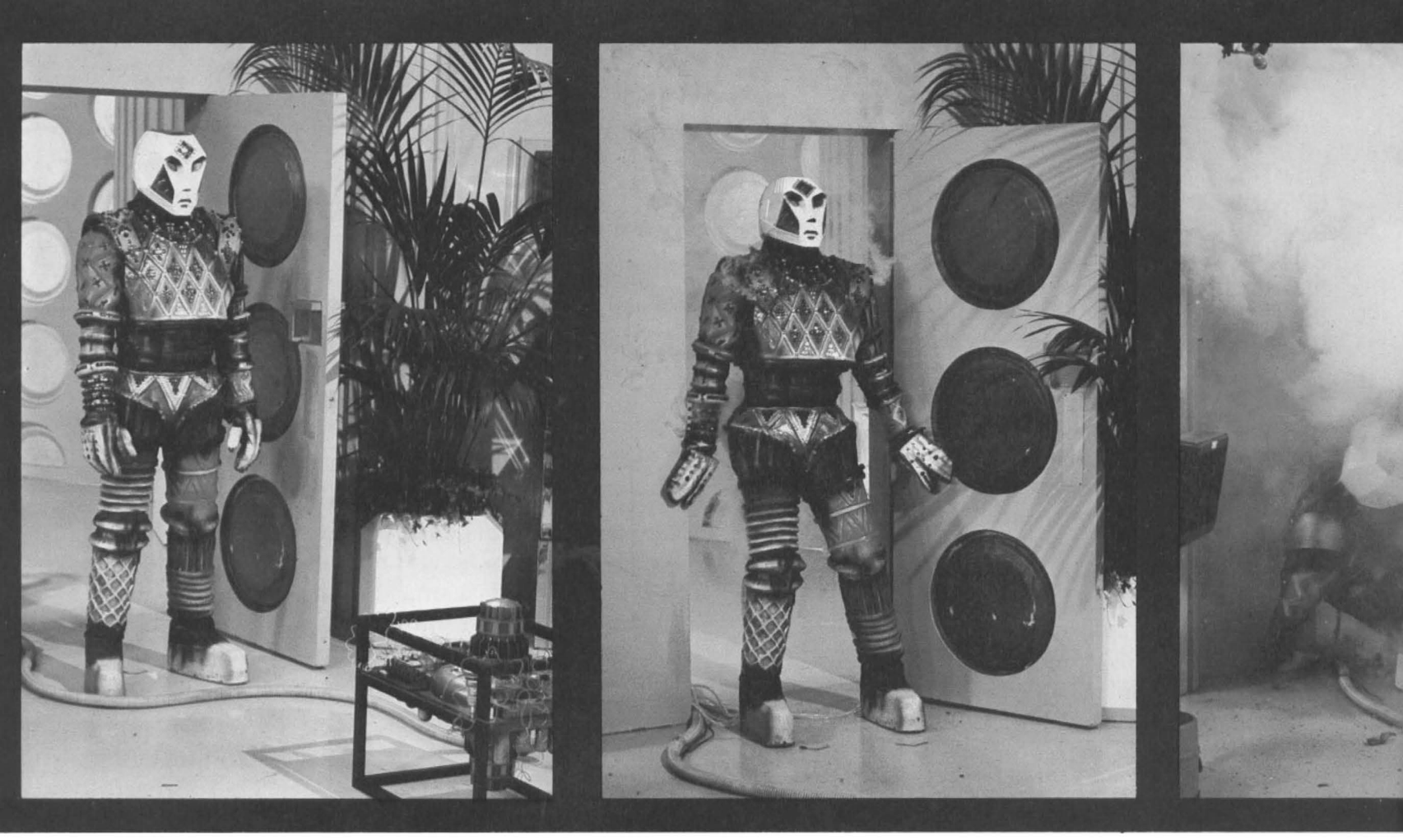
On the cupboards above her dressing table and mirror labels announce "Pommade", "Toupé tape" and "Hair whitener", but Richard Hampton corresponds exactly now to that Polaroid and needs no further attention.

Special effects

Things are not always what they seem in television, and particularly not in *Doctor Who*. In the fourth episode of "The Visitation", for instance, Nyssa destroys the Android with sound waves from a sonic booster. According to the script, as the Android is hit by the waves, he stumbles and has to support himself by gripping the door frame of the Tardis. Smoke pours from his joints. Suddenly the Android explodes.

During the studio recording session at the TV Centre, actor Peter Van Dissel, who plays the metal robot, shudders in the doorway as described. Then the cameras cut, he shuffles off the set, and is quickly replaced by a lifelike (or should it be machine-like) replica. The replica, constructed by visual effects designer Peter Wragg

Make-up supervisor Carolyn Perry at work



The end of an Android who went with a well-planned bang

and his colleagues, outwardly resembles the Android in every way, but is hollow and has large holes in the backs of its body, legs and arms. Through these the designer is inserting numerous small charges of gunpowder.

The explosives, wrapped tightly in linen tape and looking a bit like shallots, are connected by wires to an electrical firing box. Peter Wragg deftly fixes them in position with plasticine. Then under the watchful eyes of a couple of BBC fire officers, the new Android is lifted gingerly on to the set and placed in the Tardis doorway with its hands clutching the frame as Peter Van Dissel had done. All this has taken only a few moments, so carefully has it been planned and rehearsed.

As the cameras begin recording again, Peter Wragg begins pumping smoke through a tube that leads into the back of the Android. The cameras record the smoke seeping realistically out through the robot's joints. Suddenly, as the visual effects designer presses a switch on the firing box, there is an enormous bang. The studio is filled with smoke and the Android disintegrates.

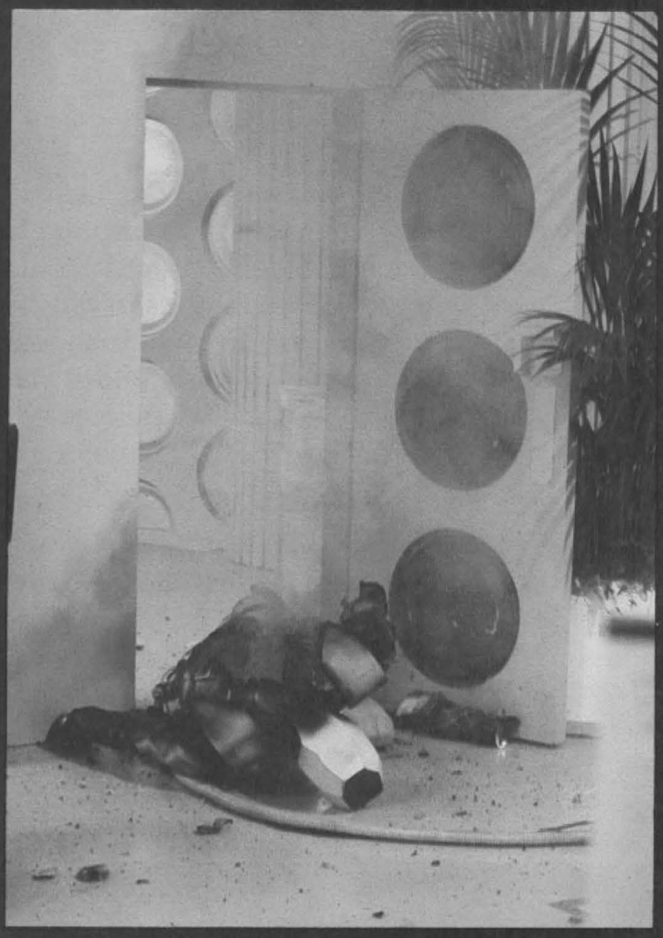
Recording stops and when the smoke clears, the burnt remains of the Android lying on the floor are supplemented with realistically damaged limbs which had been prepared in case the explosion was too successful. The cameras then record the final scene of destruction.

★ ★ ★ ★ ★ ★

The Android's demise is just one of the deceptions engineered by the wizardry of the *Doctor Who* technicians. In another part of the studio the chippies, or carpenters, have constructed a corner of 17th century London. The half-timbered houses do not extend above the ground floor, but are cut off abruptly.

Across the studio and a few feet in front of the camera that will shoot the scene, stands an enormous vertical sheet of glass. On the top section of the glass are painted the upper storeys of a row of houses. If you look through the eyepiece of the camera you see that the painted

Special effects designer Peter Wragg, right



upper storeys align exactly with the truncated ground floors in the distance.

This inexpensively made device is called a "glass shot" and the artists are so adept at matching their paintings with the scenery flats in style and colour, that no viewer could detect the deception. Glass shots can also be used on location and a second one was employed in "The Visitation" to avoid the expense of having to construct and transport part of the Terileptil's spacecraft.

★ ★ ★ ★ ★ ★

Another simple device employed on location is known as "day-for-night shooting". At five o'clock one sunny afternoon film cameraman Peter Chapman shot a scene in which a character drives his horse and cart to London. By fitting a filter on to the camera lens he contrived to make the drive appear to be taking place by night. With all its problems of overtime payments and inconvenience, night shooting is rarely done, and therefore day-for-night shooting is frequently used on TV and in films. The sky is often a giveaway. Look for puffy white clouds through the darkness.

For *Doctor Who* the most futuristic technological effects are often obtained in the most mundane manner. Actors point weapons at one another during shooting, for instance, and "death rays" are added later. In an early scene in "The Visitation", a servant comes through a door carrying a tray, looks towards the camera, sees something terrifying, throws the tray and its contents in the air and turns to run. As he turns, he is hit in the back by a narrow ray of light fired from a Terileptil gun. He falls to the ground.

Days after the actors have played their parts, video effects man Dave Jervis watches the scene over and over on a TV monitor. He stops the tape at the point where the servant is hit and estimates the angle a death ray must take to do this. Dave Jervis is armed with a special inlay camera, which can superimpose pictures it takes on the original videotape. It is an ordinary black and white camera focused on a light box.

The light box is just an illuminated screen and on it the effects man manipulates a couple of ordinary BBC manilla envelopes until the gap between them allows a narrow beam of light through at the desired angle. He then holds a sheet of card between the camera and the light box and watches the action on the monitor. As the Tereleptil fires his gun the video effects wizard briefly snatches the card away and a ray of light appears to strike the servant. And so steam-age methods produce space-age technology.

More suitably technical for the *Doctor Who* programme is Dave Jervis's Quantel, a small electronic box of tricks. It is capable, among other things, of making the TV image shudder as though an earthquake is taking place. This, too, is used in the last episode.

The ability to combine the simultaneous output from two cameras is vital to science fiction shows such as *Doctor Who*. In this system, known as colour separation overlay, the director can shoot an actor against a plain blue background. Wherever the camera "sees" blue, it can replace it with the output from another camera. Thus, by filming an actor close up and a second from a distance, the first can be made to appear a giant. Who said the camera cannot lie?

Rehearsal

Rehearsal rooms in the BBC's multi-storey block at North Acton look alike, with large windows along the length of one wall and featureless brick on the others. The red tiled floors are divided into squares.

If you make a mistake and take a wrong turn on your way to a *Doctor Who* rehearsal in room 201, you could find yourself among the staff of Grace Bros. department store in the middle of *Are You Being Served?*

In room 201 strips of white tape stuck to the floor indicate the shape of the Tardis interior, with control room, corridor and girls' room. The squares on the floor correspond to squares in the recording studio, and so enable moves to be plotted with accuracy. For the rest, director and actors have to use their imaginations. The only indications of how the set will eventually look at the studio in 10 days' time are tall metal poles that represent doorways.

A couple of stools piled on a plain table stand for the Tardis console and the most complex pieces of space technology are represented by cardboard boxes. Michael Robbins wanders through the room, looking into the middle distance and pretending to marvel at the wonders of the Doctor's spaceship. Sarah Sutton is grasping a felt-tipped pen that is supposed to be a carbon rod. A wag has labelled an L-shaped piece of wood. It reads: "Government health warning. This gun can kill."

★ ★ ★ ★ ★ ★

Peter Davison hurries in late and gets a round of applause for the quality of his excuse. His cat, it appears, took a mole into his house and he had to return it safely to the garden. "Anything is possible for Doctor Who," someone mutters.

Actors and actresses are dressed informally. The object of the exercise is to rehearse the lines and moves and iron out problems. Time spent here is less expensive than time in the studio with dozens of highly paid technicians standing idle.

At a later run-through the technicians will arrive to preview the performance from the

Glass shots cut the cost of constructing sets

Overleaf: rehearsal rooms tax the imagination

EXIT

points of view of lighting, sound, camera angles and sets. But for the moment Peter Moffatt's eyes are the only ones on the actors. And he has a dual role: first he is doing the work of the conventional stage director, coaxing the desired performances from his team. Secondly, he must already be looking at what is happening with the special skills required of a TV director. He stands in the planned position of his camera for a scene from the fourth episode set inside the Tardis. "I can't see Adric," he complains. "You are hidden behind the rotor."

The pace of the morning is leisurely. There is plenty of opportunity to repeat and repeat scenes and iron out difficulties, and when one of the actors fluffs the same line over and over again, there is time for a joke and a chance to avoid embarrassment. Ten days later the same occurrence before the cameras could prompt hara-kiri. On the other hand, if you can act in this room, with all the atmosphere of a multi-storey car park, you should be able to act anywhere.

Recording

Studio 3 at the BBC's TV Centre is an enormous room like an aircraft hangar. It is approximately 100 feet long and 75 feet wide. An illuminated sign over the door discourages visitors. "No unauthorised entry to the studio," it says. A red bulb lights up when a transmission or recording is in progress, and then no one is allowed to enter or leave.

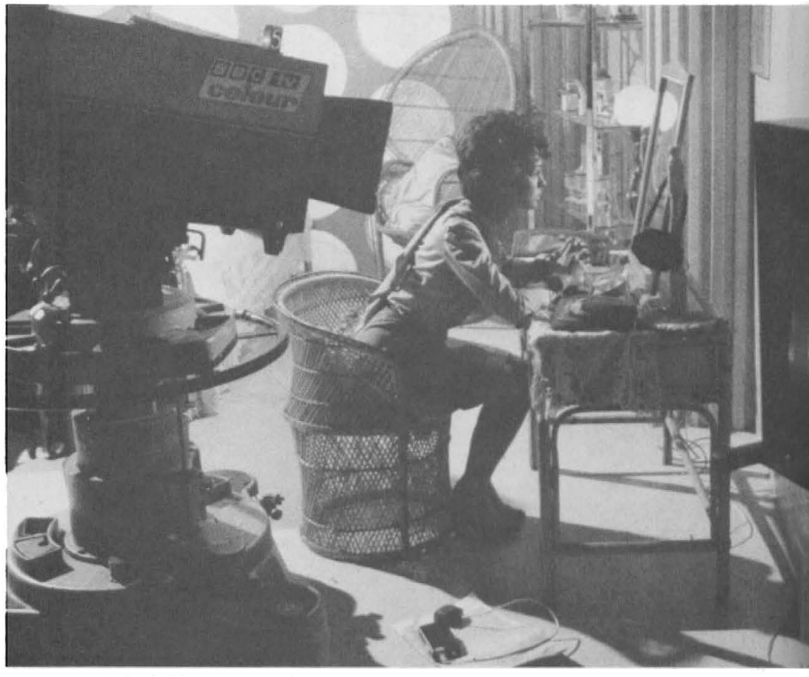
On a notice board just inside the door there is a plan of the studio drawn up by designer Ken Starkey. It is divided, like graph paper, into 1,570 squares and the position of each set needed in today's recording is marked on it.

At one side the Tardis, with its control room, corridor and girls' room, is indicated. Nearby is the outline plan of a spaceship escape craft and opposite are a stable, barn and bakery.

The squares on the plan correspond to squares marked out on the studio floor and enable a designer's instructions to be followed exactly. Folded away at one end of the studio is the retractable seating accommodation used by invited audiences at light entertainment shows. Cables as thick as your wrist snake across the studio floor from electric sockets and camera connections.

More than 200 lights hang from the high ceiling on latticed supports known as pantographs. They hover at all angles and could be a new species of monster from a *Doctor Who* script. At the moment only a few are lit: electricity is expensive and the heat generated when they are all on makes the studio uncomfortable.

The contrast between the two sides of the studio beneath them could scarcely be greater. At one end the futuristic decor of the Tardis and at the other 17th century England with half-timbered buildings and cobbled roads. Ten steps across the floor take you from the past to the future.



Janet Fielding in close-up

The Tardis girls' room is just one of seven sets in Studio 3

Half an hour before the actors move in a carpenter is roughing up the wall of a barn that looks too hygienic for plague-ridden England. The scenery was built in the BBC's own workshops. Costs of storage nowadays mean that it is cheaper to build new sets for each show than keep them in case they could be used again.

The actual scenery flats, of course, may be repainted and used again in other productions. Many in the studio today have been used before in earlier shows as may be seen from the telltale labels on their backs. "Dawson Watch" and "The Impresario" are just two in evidence here now.

Studio time is costly, too, and so the sets have all been erected in great haste. Just 24 hours ago this studio looked as though it needed another week's work before it could be ready. Electricians worked through the night positioning the lamps according to the lighting supervisor's instructions.

With one minute before the cameras begin their work there is great activity on the studio floor. The set designer is taking a last look at his handiwork; members of the costume department are spraying the Terileptils to make them gleam under the lights; an artist is putting the finishing touches to a glass shot of the barn; make-up artists are scrutinising the actors and actresses for signs of wear and tear; the camera operators are lining up for their first shots and the boom operators with their long poles look like fishermen on a river bank.

Production manager Ros Parker, who doubles as floor manager in the studio, is pleading for

DR. WHO - 5X

"The Visitation"

20th May 1981

TC 3

RECORDING ORDER

PAGE	SCENE/CHARACTERS	D/N	SHOTS	CAMS
1	Ep. 2 Sc. 27 Int. Stable THE DOCTOR MACE MILLER The Doctor and Mace enter. as Miller drives out cart.	D3	1 - 4	4A 1A 3A
3	Ep. 2 Sc. 31 Int. Stable THE DOCTOR MACE 1ST VILLAGER villagers The Doctor and Mace are caught in the barn.	D3	5 - 15	2A/B 1A 3B
5	Ep. 3 Sc. 1 Int. Stable THE DOCTOR MACE HEADMAN 1ST VILLAGER POACHER villagers Villagers argue, Poacher enters.	D3	16 - 22	2B 1A
8	Ep. 3 Sc. 8 Int. Harness Room THE DOCTOR MACE HEADMAN POACHER The Doctor and Mace are	D3	23 - 31	4B 3C 2C

CAST LIST

The Doctor .....
Adric .....
Tegan .....
Nyssa .....
Richard Mace ..
Terileptil ....
Android .....
1st Villager ..
Headman .....
Poacher .....
Miller .....

Villagers ....

Scytheman ....

Terileptils

Fight Arrang

SETS

Stable
Harness Ro
Escape Pod
Tardis Gir
Tardis Cor
Tardis Cor
Bakery Ba
Barn

silence. Like the camera operators and sound men, she is wearing headphones—commonly known as cans—which keep them all in touch with the director up in the gallery.

★ ★ ★ ★ ★ ★

Compared with the hubbub on the studio floor, the atmosphere in the gallery is tranquil. The gallery, set high above the studio, is reached by a steep metal staircase and is divided into sound, lighting and production studios.

The quiet of the production studio masks a certain tension. After all, this is recording day. All the preparations and rehearsals have been leading up to this moment. Now is the time to get it right and time is a commodity no one has too much of. The *Doctor Who* team have the use of the studio and galleries for only five days and during this time they must rehearse and shoot the four 25-minute episodes that make up "The Visitation".

After that the sets will be taken down and the studio will be used for another show. Small wonder that director Peter Moffatt says "An over-run *costs*." If he is more calm than one might expect in the circumstances, it is possibly because when he began directing everything went out live, and recording, whatever the pressures, can never be quite as nail-biting as live transmission.

Lighting in the gallery is subdued so that the director and his colleagues can see clearly the pyramid of nine monitor screens in front of them. There is a monitor which shows what each of the five cameras on the studio floor below is focused on. Above these is a sixth monitor which carries the picture the director has chosen for transmission. A red light comes on under the monitor that is currently in use.

Peter Moffatt sits at a curved metal desk which is far more complex than the Doctor's console in the Tardis control room. On it there are adjustable microphones and banks of red, blue, green and yellow lights, buttons, switches and dimmers. In addition, there is a stopwatch built into the desk and a device known as the "God switch" allows the director's voice to boom directly on to the studio floor. Altogether it is not unlike the cockpit of a Jumbo jet.

To the director's left sits his production assistant and next to her the electronic effects operator; on his right are the vision mixer, the producer, keeping a watching brief, and finally the technical manager.

Peter Moffatt has armed himself in advance with a card bearing the Christian names of his five camera operators for the day—good personnel relations when you are working with technicians you might never have met before.

There is some holdup on the studio floor. The clock in the gallery above the monitors shows that it is 14.13. Rehearsal should have begun 13 minutes ago. The director glances up at the clock. "Oh, dear! We're way behind already," he murmurs.

"Can we have some air?" It has soon become stuffy in the cramped gallery. Almost before the director has finished speaking, it seems, someone arrives swinging a device that looks rather like a football fan's rattle. It is a special thermometer and confirms that the room's temperature is indeed too high.

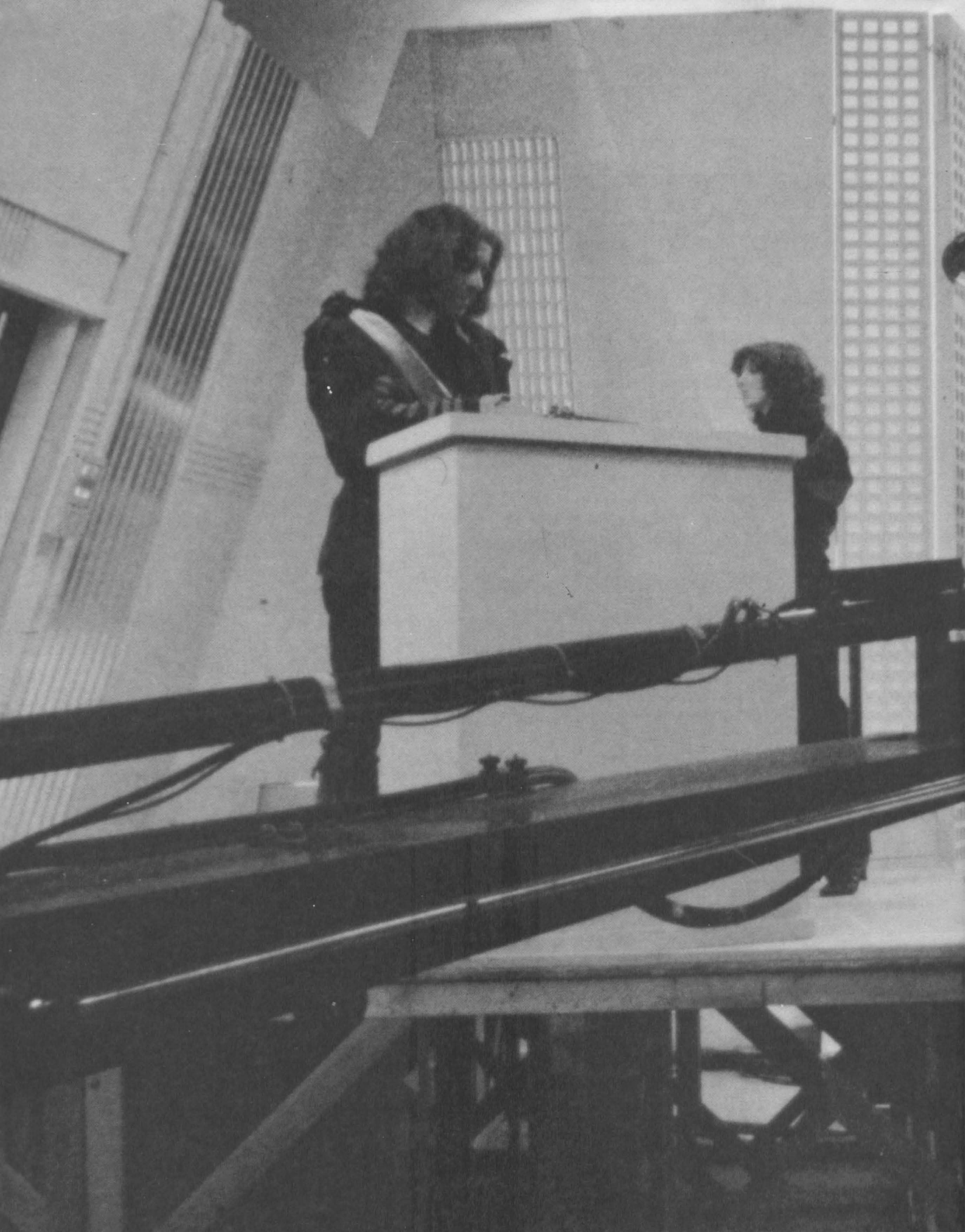
Everyone in the gallery is armed with a copy of the director's shooting script. It is a meticulous schedule of everything that has to take place in front of and behind the cameras in the studio today.

As on location, there is no attempt to follow the action in the order it will be transmitted. Today, for instance, the first two scenes are from episode two and the next nine are from episode three. It does not make matters easier for the actors who are trying to develop a role.

When rehearsals are over, it is time to begin in earnest. The floor manager calls the details of the first scene to be recorded: "Episode two. Scene 27. Stand by in the stable."

Pages from the director's shooting script

Overleaf: a camera closes on Michael Robbins



colour

A sinister intruder in the stable

"Cue Peter," says the director from the gallery and, stooping out of sight of the cameras, the floor manager makes a Karate chop with her hand to alert Peter Davison and scurries back to watch the scene critically on a portable monitor behind the cameras.

★ ★ ★ ★ ★ ★

Peter Davison and Michael Robbins have to enter a stable as the miller drives his cart out. There is not room for them and the cart in the entrance. If they move elsewhere they cannot be seen by the cameras. Precious minutes are lost in rearranging the action to deal with this unforeseen snag.

When the scene is eventually recorded to the director and producer's satisfaction there is a hubbub of relief from actors and technicians, but Ros Parker admonishes them like a brusque headmistress. There is more work to be done.

Up in the gallery production assistant Julia Randall is calling the shots, literally. As the action unfolds she announces which camera is recording and alerts the next camera operator. "Shot 27 on four," she says into her microphone. "One next." This indicates that camera four is providing the current shot and that camera one will be in action shortly.

On the director's right, the vision mixer is trying to keep an eye on the shooting script, the camera monitors and the transmission monitor, while punching up the buttons that switch attention from camera to camera.

Some directors take charge of proceedings from the studio floor. "I'm the old-fashioned type who stays up here," jokes Peter Moffatt. Despite the pressure there is time for the odd moment of relaxation. In one scene the script calls for a villager to prepare to execute the Doctor with a scythe. The villager raises his scythe above his head and the camera follows it. Peter Davison

Costume designer Odile Dicks-Mireaux, right

looks up apprehensively and the director tells him he is not in shot and so can withdraw to safety. "We don't want to lose our new Doctor so soon in his career," he smiles.

With breaks for meals, recording goes on until 22.00 by the studio's restless clock. It is a tiring schedule for actors, technicians and production staff. There are five days of it. On the last day, when recording is over and everything is safely on videotape, John Nathan-Turner and a few colleagues go for a quiet drink in the BBC bar. Everyone is tired but satisfied with the work of the past few days. They do not stay long. As they move to go, the producer discovers he has left his jacket in the studio and goes back to fetch it.

The studio lights are dim now and already not a sign of the Tardis or 17th century London remains. Only a few piles of scenery waiting to be removed to make way for the next production in Studio 3.

Costume

Convinced that the kids are all watching the monsters anyway, costume designer Odile Dicks-Mireaux decided to allocate two-thirds of her budget to the construction of the four non-humans in the production: three Terileptils and an Android. This was quite daring, considering that there are 17 other characters to be dressed.

A science-fiction fan and admirer of *Star Wars*, she knew also that attempting to compete with what was on offer on the big screen would not be easy. "Trying to achieve something with a certain amount of originality with the kind of money that's allowed and the kind of time available is difficult."

First she showed the producer and director what she had in mind for the Terileptils, as these would be the most time-consuming to make. She considered what kinds of creatures had not been drawn on in earlier *Doctor Who* stories and decided that fish were the least hackneyed. "I had tropical fish in mind," she says.

Having set in motion the construction of the Terileptils, she turned her attention to the Android, the next most complicated costume. "That I designed in about a week, relying on armour and some 1930s references," she says. The script said that the Terileptils love beautiful things, so she felt that the Android ought to look like a piece of sculpture rather than something menacing. The idea of the inlaid precious stones came from the glowing bracelets with which the monsters enslave their victims.

★ ★ ★ ★ ★ ★

Next she gave herself a week to research the 17th century and find as many visual references as possible. She had studied theatre design at college, but after working on contemporary plays, needed to brush up on her history. Armed with the names and sizes of the actors who had by then been cast, Odile Dicks-Mireaux visited costumiers such as Bermans & Nathans and the National Theatre, which also hires out costumes from its enormous store.

If the costumes were rather too immaculate for her purposes, they were subjected to a certain amount of creative crumpling and tearing. When they have all been made to her satisfaction, she sometimes has to agree to changes in order to suit individual actors' preferences. For example, Odile Dicks-Mireaux wanted most of the actors to wear hats, because it was unusual for men to go bareheaded in the 17th century. But one actor declined to wear a hat obtained specially for him. "You win some and you lose some," she says.

Production associate

If there was always enough money and enough time to make *Doctor Who*, Angela Smith's job would be boring, she says. "My job is making things work with not quite enough money and not quite enough time."

As production associate, she has to balance the programme's budget and make sure that over the year it does not use up more than its fair share of cash. From past experience on the creative side of TV she is convinced that no matter how much money or time were available, the programme makers would always want just a little more. In her present post she has learnt to look after the BBC's money and worry about spending it as if it were her own.

When she is given a new script several months before production is due to begin, she sees it not in terms of scenes and shots, but of pounds and pence. "I break it into various areas, such as set design, costumes, artists, make-up and so on, and work out what I would expect everything to cost."

Next she draws up a budget—a financial document—and presents it to the producer. If he agrees with her sums, this budget is then passed on to the director, so that he knows from the outset how much he has to spend.

Frequently, of course, a director points out certain elements of his plans that could cost more than Angela Smith has bargained for. "I'm perfectly willing to be persuaded," she says sweetly, but then adds ominously "... within reason." If the director puts up a good enough

case, she can dig deeper into the programme purse. "The alternative is that I find him another way of doing what he wishes."

It is vital for everyone to understand that if extra money is allocated for one episode and cannot be found by making economies in another part of the show, there will be less to spend on subsequent *Doctor Who* stories. Unexpected circumstances such as bad weather, strikes or the illness of an actor can boost costs, and to meet such eventualities Angela Smith likes to build up a little buffer, as she calls it.

If, on the other hand, a story early in the season can be made for less than expected, the amount of cash saved is available for a more lush production later.

By the time a unit is filming or recording one episode in the studio, a production associate will normally be working on the next one or even the one after that. For in addition to her financial duties, she is responsible for arranging for studios, editing rooms and various technicians to be available when needed.

Each of the studios at the TV Centre has slightly different facilities. Because *Doctor Who* makes use of so many visual effects it is best if it can be made in the ones with the most complex electronic equipment. Angela Smith has to put her claims in early so as to be well placed in the queue for these studios.

"My job is a planning job," says Angela Smith. "That's why I like it. It is rather like putting the pieces of a jigsaw together and making them fit. But there's always one piece missing."

Production Manager

Ros Parker is paid for talking to people in pubs. At least, that can be part of her task as a production manager. In "The Visitation", for instance, an Elizabethan manor house is featured and it was her job to track down such a building. The house she was looking for had to be within the prescribed 30-mile radius of the TV Centre allowed for single-day filming sorties.

As the crew's starting point at the Centre is on the West side of London, it seemed logical to search in that direction and avoid tedious, cross city drives through heavy traffic each day.

The BBC facilities department has a list of Elizabethan homes whose owners are willing, for a fee, to hire them to film and TV makers. These, however, turned out to be too big for her purpose, so Ros Parker was obliged to take her car out into the highways and byways of the Home Counties house-hunting.

★ ★ ★ ★ ★ ★

In Hurley, not far from Maidenhead, she saw just the place she was looking for: a two-storey Elizabethan house with mullioned windows, a heavy oak front door reached by a couple of steps and house martins skimming around the roof. It was all she could have wished for. There was even a lych-gate and a circular dove-cot.

Ros Parker headed for the pub to make her usual inquiries about the ownership of the house, and met some people who told her all she needed to know. "I banged on the door, said, 'Hello, I'm from the BBC and we'd like to use your house for a location,' and they said 'Yes'." They had never been asked to do such a thing before, but the idea appealed to them.

This agreed, the production manager returned to the director with news of her find. He took a look at it. The house was in a dead end, so there was no problem with unit vehicles blocking through-traffic, and the drive was wide enough to accommodate a horse and cart.

A production manager is the director's right-hand man (or woman). It is her job first to find

what the director wants and then to make sure he gets it. Within reason, that is. The production associate has already set the budget limit and one of the manager's tasks is to ensure that her director keeps within it. "I have to dissuade the director from doing anything exotic if we don't have the money for it."

She devises the film schedule and, just as important, makes sure he keeps up with it. "One has to get people moving and jolly them along." It sounds like the qualifications for a PE instructor who doubles as a music hall comedian.

On location the production manager ensures that all services, such as catering and loos, are available. If it rains constantly and the director falls behind her schedule, so that it looks as though filming might run into the evening, it is the production manager who has to keep people calm and persuade them to work on long after they had hoped to go home. She also has to see that food is still available during late filming, or, if it is not, that everyone is resigned to going without.

In short she needs the authority of a galley captain and the tact of a United Nations mediator. And, as if all that is not enough, when the production reaches the studio, Ros Parker doubles as floor manager.

Production assistant

Like all the BBC's production assistants, Julia Randall began work as a secretary. "There's a lot of paperwork involved." This is why assistants have to reach a shorthand speed of 100 words per minute and a typing speed of 50.

Among the first of her tasks when a production gets under way is the making of availability checks: that is ensuring from agents that the actors her director has earmarked for various roles are free at the required time. She also finds out how much they will cost. "Budgets are very important," she says. On *Doctor Who* there are the four main characters who are constant. "Then you normally plan to get one other who is going to cost fairly high." In this case it was Michael Robbins.

An actor of Michael Robbins' standing would be sent a script to read, and then meet the director to discuss his role. Others would be engaged through the BBC's bookers. In all cases copies of contracts come back to Julia Randall so she can work out the total cost for the production.

Rehearsal scripts have to be sent to the actors and production team. Then all kinds of planning meetings must be arranged with set designers, make-up artists and costume designers.

On location and in the studio the production assistant keeps a close check on the timing of scenes. In the studio her most important task is organising the time code. On the 2 inch tape used for recording TV programmes there is a space on which this time code is entered. It records the time of day a scene is shot and its duration, and it can be used to identify spools quickly at cutting and dubbing sessions later.

When the filming is over and the new programmes are ready for showing, the production assistant works out the final costings and types up the script of the programme as transmitted with all amendments and alterations included.

This will be of use to overseas TV companies who will be dubbing on dialogue in their own language and need to know exactly what is said by all the characters.

Summing up what she does, Julia Randall says, "I do almost everything that nobody else does." What she likes about the job is that she is with the show from the start to the end. Quite often she is at work right up to transmission date. "You see it actually going out on the screen, which is rather nice."

Fans

Fans bombard the BBC's *Doctor Who* office in Shepherd's Bush with so much mail that producer John Nathan-Turner has to have two secretaries. It is a luxury shared by none of his colleagues in the drama department.

"Every single letter is answered," says secretary Jane Judge, who has been with the programme for three years. Some of her favourite letters and drawings are displayed on the wall behind her desk. On shelves around the office there are box-files of correspondence with labels such as "Australia" and "America".

One file is devoted entirely to the hundreds of letters of protest that were received when K-9, the Doctor's dogged computer companion, was written out of the series. "Please don't throw out K-9", says letter after letter plaintively. But fans have positive reactions to programmes, too. They write to congratulate the team on the quality of the show, which is very gratifying. Others link their good wishes with requests for photographs or autographs of their favourite players. Inquiring fans have queries about every conceivable aspect of the show.

Secretaries Jane and Fiona with fans' letters

"There are constant inquiries for props from the programme," says Jane Judge. "We keep a stock of things we salvage." These are sent to registered charities to raise money. Scripts are never parted with because of copyright problems.

Ideas for future shows flow in by every post. Some fans contribute complete scripts. One persistent Scottish lad kept up a correspondence over the years with successive producers and script editors. Sometimes they marked his letters "interesting" or "a boy to watch."

Finally, 18-year-old Andrew Smith of Rutherglen was commissioned to write a script. "Full Circle", the story he came up with, featured the Marshmen and was popular with viewers. On the strength of his success Andrew gave up his university studies and has contributed to *Not the Nine O'Clock News* and other TV and radio programmes.

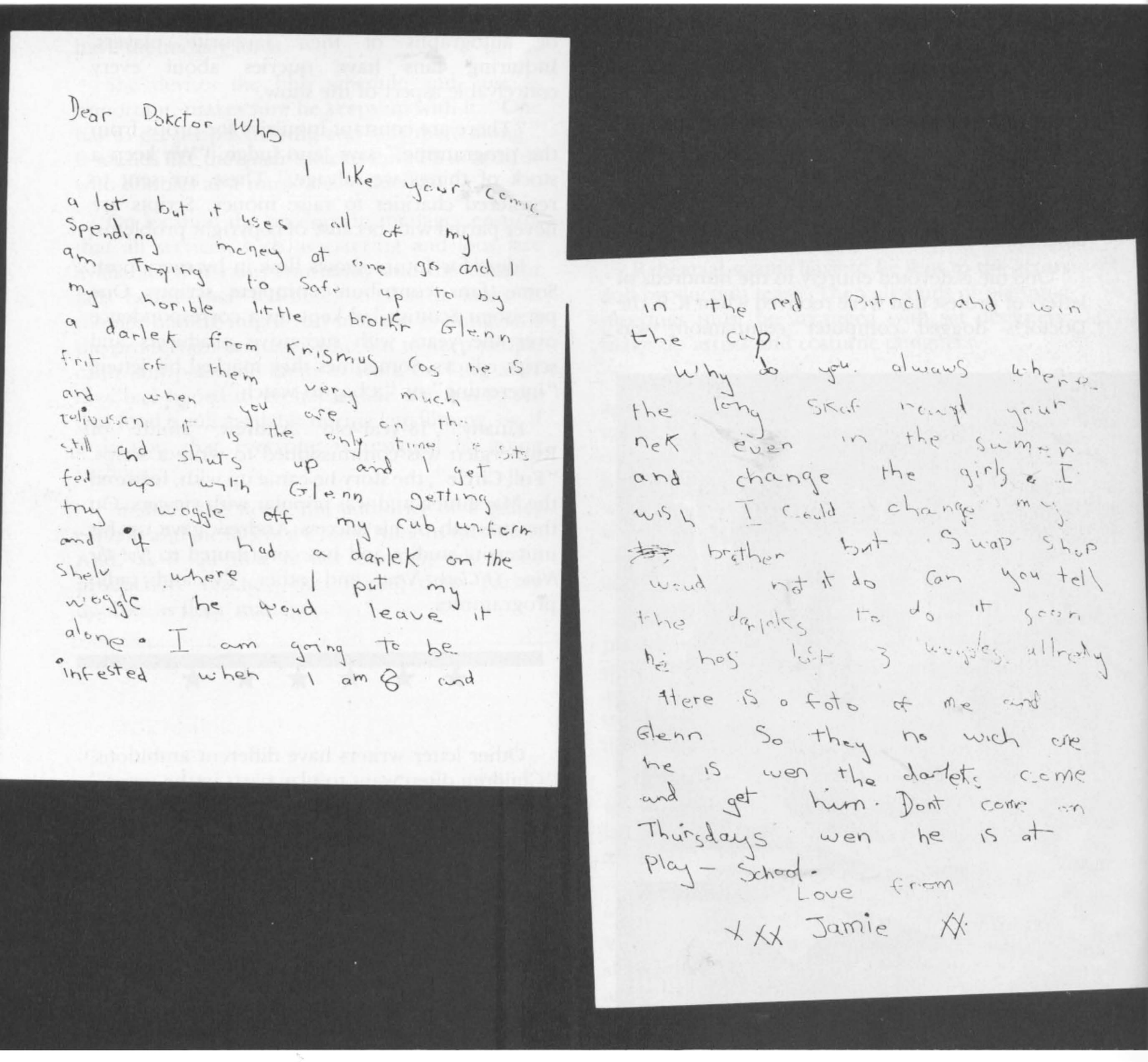
★ ★ ★ ★ ★ ★

Other letter writers have different ambitions. "Children often want to play parts in the series," says Jane Judge. They are told politely, but firmly that only professional actors can be engaged. Others who have to be turned down are those who ask to attend recordings of the show. There are no facilities during recording for the hordes of fans who would no doubt descend on the TV Centre, she points out, and besides age and safety regulations are very strict.

In 1976 the Doctor Who Appreciation Society was formed with 70 members. Today the

society—a non-profit-making body—has 1,700 members in Britain and around the world from America to Zimbabwe and proudly claims to be the only fan group with official BBC recognition.

Membership of the DWAS, as they call themselves, costs £3 a year. For this members receive a monthly news letter entitled "The Celestial Toyroom." The society also produces



Dear Doktor Who

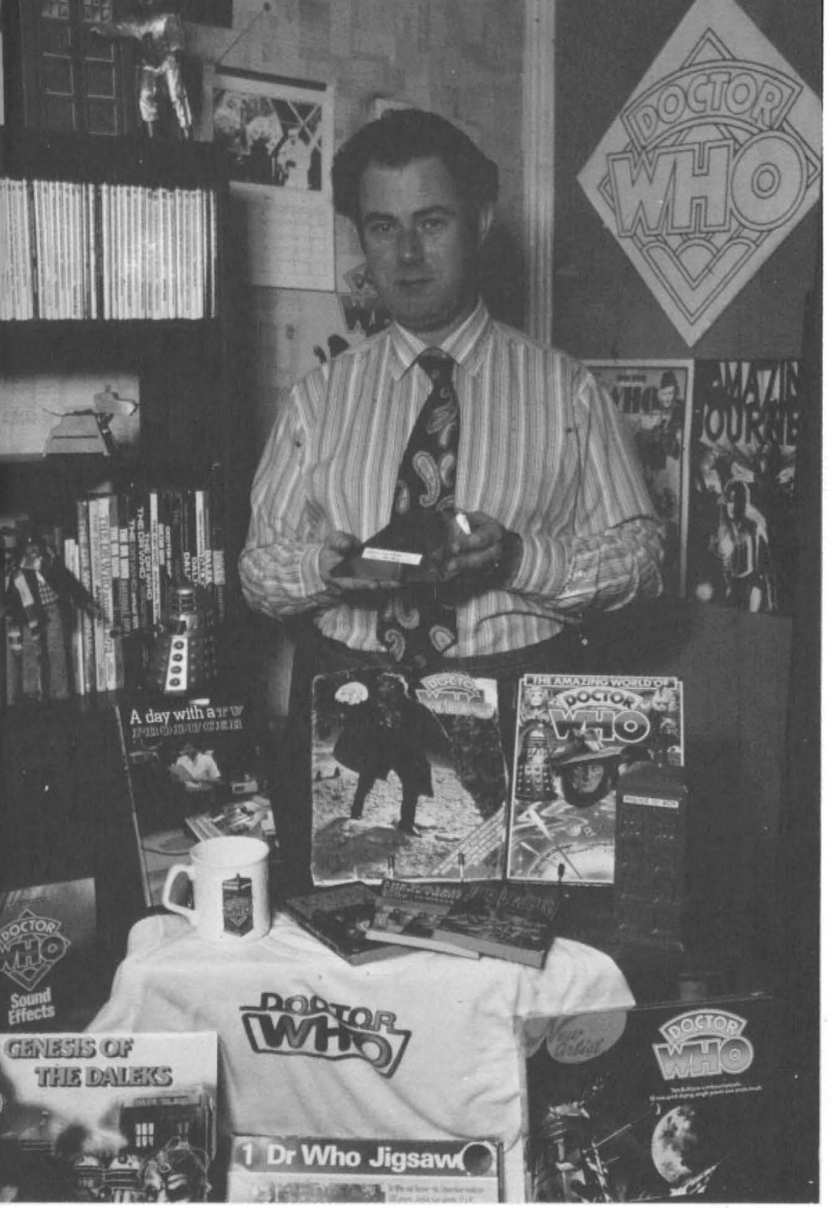
I like your comic a lot but it uses all of my Spending money at one go and I am Trying to Safe up to by my horible little brother Glenn a darlek from Knismus cos he is frit of them very much and when you are on the telivusion it is the only time he sits still and shuts up and I get fed up with Glenn getting tny woggle off my cub uniform and if I had a darlek on the Shelv where I put my woggle he woud leave it alone. I am going to be intrested when I am 8 and in the red Patrol and win the cub.

Why do you always when the long Skaf nevgt your nek even in the Summer and change the girls. I wish I could change my brither but Swap Shop woud not it do Can you tell the darleks to do it soon he has lost 3 woggles allredy

Here is a foto of me and Glenn So they no wich one he is wen the darleks come and get him. Dont come on Thursdays wen he is at Play-School.

Love from

XXX Jamie XX



Superfan David Saunders in his den

"Tardis," a bi-monthly magazine which contains articles and photographs, and "Cosmic Masque", a magazine which appears twice a year and is given over to *Doctor Who* stories written by members.

A 12-member executive governs the society whose members are largely boys, but there are no formal elections for office. Co-ordinator of DWAS is David Saunders, who lives in North London within a few miles of the TV Centre. "I've been addicted to the series from the word go," he says, but admits that Patrick Troughton was his favourite Doctor.

In his den at the top of the stairs of his terraced house he has surrounded himself with mementoes of 18 years of homage to Who. He has scores of paperback adaptations of *Doctor Who* stories plus "Doctor Who Annuals" and "Dalek Annuals." Lurking on the shelves among his books are scale models of Cybermen and Tom Baker in costume.

On the top shelf next to a bright blue Tardis, a Dalek looks ominously down on his vast collection of *Doctor Who* records, cassettes, posters, jigsaw puzzles, models and even a painting-by-numbers set. David Saunders indicates something which looks like a piece of perspex, but which is, he says, is a segment of the Key to Time featured in the 16th series. It is due to be presented to a member of the society.

Asked how much time he devotes to DWAS, the Brent librarian says simply, "Too much!" Scarcely a day passes without some demands being made on his time by the Doctor's devoted fans.

"It could take over," he says. David Saunders would like nothing better than to give up his work and devote himself full-time to the DWAS, but cannot afford to take the gamble. Regular meetings with the show's producer enable superfan Saunders to keep in touch with coming events. In one way he does not like learning what is happening in the next season. "Knowing can spoil it for you," he says.

In his thirties, David Saunders is older than the majority of the members, who are, he estimates, between the ages of 16 and 20. He is unmarried. "I don't think a wife would put up with all this," he says.

Conventions such as the one held at Queen Mary College in London, give him and other society members an opportunity to meet members of the *Doctor Who* cast and the team who produce it.

They discover, as we have done, just how many people, behind the cameras as well as in front of them, are needed to get the Doctor and his famous police box off the ground for a single story such as "The Visitation".

Glossary

Boom	Adjustable rod for holding microphone near actors.
Camera script	Script broken into shots with directions for cameras.
Cans	Headphones.
Chippy	Carpenter.
Closed circuit	Material screened but not transmitted.
Console	Lighting and sound control desk.
Credits	Closing sequence when actors and production team are named.
CSO	Colour separation overlay—method of combining two separate shots, foreground and background, to make a composite image.
Cue	Pre-arranged starting signal.
Dolly	Moveable platform for film camera.
Dubbing	Adding pre-recorded sound to tape.
Gallery	Studio control room.
Glass shot	Painted scene on glass to supplement a set.
God switch	Device to allow director to speak directly to studio floor.
Grips	Man who guides dolly.
Location	Setting away from studio.
Monitor	TV screen for viewing during production.
Props	Properties or moveable objects used on set.
Radiophonics	Electronic method of making music and sound effects.
Rushes	First screening of previous day's filming.
Storyline	Brief outline of proposed script.
Sypher	Technique of dubbing sound on to edited tape.
Time code	Method of identifying videotape by registering time of recording.
VTR	Videotape recording of vision and sound on magnetic tape.

In writing this book the author and illustrator were helped
at every stage by John Nathan-Turner and the Doctor Who team.
The publishers would like to join them in thanking the BBC
for their co-operation.

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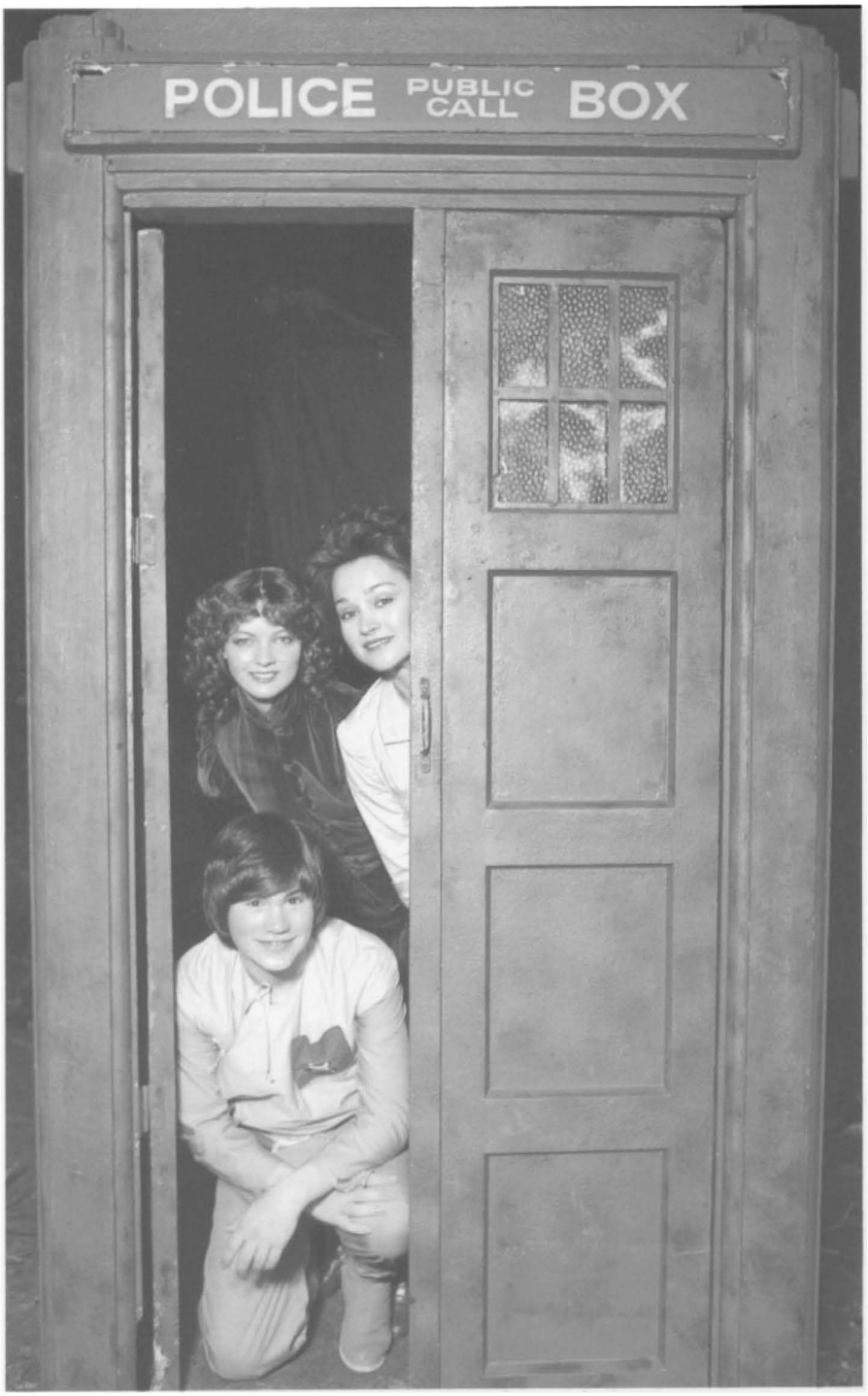

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